REPORT

OPERATIONS AND MAINTENANCE REPORT

FIRST QUARTER OF THE SECOND BASELINE PHASE, NORTH AND SOUTH FILLS

Sharkey Landfill Superfund Site
Morris County, New Jersey

Prepared for: Sharkey Landfill Agreement Group
Technical Committee

Submitted By: Golder Associates Inc.
200 Century Parkway, Suite C
Mt. Laurel, NJ 08054

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January 2015

Project No. 943-6198-003

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January 21, 2015

Project No.: 943-6198-003

Ms. Pamela J. Baxter, Project Manager
United States Environmental Protection Agency
Region II Headquarters
290 Broadway, 19th Floor East
New York, NY 10007-1866

RE: OPERATIONS AND MAINTENANCE REPORT
FIRST QUARTER OF THE SECOND BASELINE PHASE FOR THE NORTH AND SOUTH FILLS
SHARKEY LANDFILL SUPERFUND SITE, MORRIS COUNTY, NEW JERSEY

Dear Ms. Baxter:

On behalf of the Sharkey Landfill Agreement Group (Group), Golder Associates Inc. (Golder Associates) is pleased to present the United States Environmental Protection Agency (USEPA) with two (2) copies of this Operation and Maintenance Report, First Quarter of the Second Baseline Phase associated with the North and South Fills for the Sharkey Landfill Remedial Design/Remedial Action project. This Operation and Maintenance Report summarizes the quarterly monitoring event at the North and South Fills at the Sharkey Landfill Superfund Site (Site) conducted in October 2014. This report has been prepared in accordance with the requirements of the Site Consent Decree. Results of water level (hydraulic) monitoring are not included with this report, as they are now managed by the Township of Parsippany-Troy Hills.

Sampling results from the above referenced sampling events do not indicate an exceedance of the Well Trigger Levels or River Trigger Levels in the North and South Fills. These results are consistent with the Remedial Design approach that the need for continued groundwater extraction at the North and South Fills may not be necessary.

The next quarterly monitoring event for the North and South Fills is scheduled to occur in January 2015 and the next analytical sampling event for the Small Fills is tentatively scheduled to occur in Spring 2016.

Very truly yours,

GOLDER ASSOCIATES INC.

Patricia L. Landes
Senior Project Environmental Scientist

Mark E. Case, PE
Principal and Northeast/Southeast Regional Leader

cc: J. Nickerson, NJDEP
D. Stever, Kirkpatrick Lockhart
J. Rolfe, *de maximis*
S. Mizerek, Twp. of Parsippany-Troy Hills
M. Luciano, HMAT
M. Kleiman, Golder Associates

PLL/MEC

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Golder Associates Inc.
200 Century Parkway, Suite C
Mt. Laurel, NJ 08054 USA
Tel: (856) 793-2005 Fax: (856) 793-2006 www.golder.com
Golder Associates: Operations in Africa, Asia, Australasia, Europe, North America and South America

Table of Contents

List of Tables

List of Figures

List of Appendices

1.0 INTRODUCTION

1.1 Report Requirements

This report is submitted as required by the Revised Final (100%) Design Report (Golder Associates, 2000) and presents the results of the first quarter of the Second Baseline Phase for the North and South Fills, which was conducted by Golder Associates Inc. (Golder Associates) in October 2014. The quarterly monitoring is required by Sections E.10 and E.12 of the Statement of Work (SOW)[1]. The Second Baseline Phase is designed to provide data to evaluate the effectiveness of the remedy. Specifically, Golder Associates collected samples from the groundwater monitoring wells on the North and South Fills and each surface water station in both the Rockaway and Whippany rivers (collectively referred to as "rivers") (R1 through R4 and W1 through W6) following the shutdown of the groundwater extraction system (GWES), which occurred in August 2014. The groundwater samples were analyzed for the Target Compound List (TCL) / Target Analyte List (TAL) chemicals, including the Well Chemicals (WC, Exhibit A of the SOW), and the surface water samples were analyzed for the TCL/TAL, including the River Chemicals (RC, Exhibit C of the SOW). Additionally, water level measurements were taken where possible from the groundwater monitoring wells on the North and South Fills during the quarterly monitoring event.

The Second Baseline Phase monitoring program was performed in accordance with Appendices B and C, *Performance Monitoring Field Sampling and Quality Assurance Plan for the Remedial Action and Health* (PMP) *and Safety/Contingency Plan for Operation and Maintenance Activities*, respectively, of the Revised O&M Plan (Golder Associates, 2005), and with the SOW, Appendix B of the Consent Decree. This report is submitted, as required, to both the USEPA and the New Jersey Department of Environmental Protection (NJDEP).

1.2 Project Background

The Sharkey Landfill Superfund Site (Site) is located in the Townships of Parsippany-Troy Hills and East Hanover, in Morris County, New Jersey. The Site is bounded by Route 46, New Road, and the Rockaway River and extends south beyond Interstate Route 280 between Troy Meadows and the Hatfield Swamp. The landfill Site is approximately 90 acres in size and is divided into five separate landfill areas: the North Fill, South Fill, Northwest-North Fill, Northwest-South Fill, and Southwest Fill.

In September 1983, the Site was included on the National Priorities List (NPL) as a result of assumed impacts from historic fill material. Various contractors for the NJDEP conducted a remedial investigation and feasibility study (RI/FS) through July 1986. The results of the RI/FS indicated the presence of low concentrations of organic (including pesticides) and inorganic compounds in soils, and low concentrations of organic and inorganic compounds in the shallow water beneath the Site. The shallow water bearing

[1] The Statement of Work (SOW) is Appendix B of the Consent Decree for Sharkey Landfill Superfund Site (December 1994).

zone beneath the Site that is referenced throughout this report ("shallow groundwater") is isolated both vertically and horizontally. As concluded in the RI, the shallow groundwater is isolated from deeper groundwater systems by a confining varved clay layer, which is continuous across the Site and beneath the Fill areas. The shallow groundwater beneath the Fill areas immediately discharges into the adjacent Rockaway and Whippany Rivers, which form hydraulic barriers for the lateral migration of the water beneath the Fill areas; hence the shallow water beneath the Site is isolated vertically and horizontally from regional groundwater systems.

Based on the results of the RI, the USEPA and NJDEP established cleanup goals and objectives for the Site. The USEPA selected a remedy to accomplish these goals, which is presented in the Record of Decision (ROD) (USEPA, 1986).

The USEPA modified the selected remedy and notified the public in the Explanation of Significant Differences (USEPA, 1993). The Consent Decree, issued by USEPA in 1994, outlines the responsibilities of the Group, the Township of Parsippany-Troy Hills, and others for remedial design, remedial action (RA), and Operations & Maintenance (O&M).

The Statement of Work (SOW), Appendix B to the Consent Decree, provides explicit details about the groundwater monitoring, surface water monitoring (collectively referred to as "monitoring"), and reporting requirements that are required during the O&M phase of the project. Specifically, the O&M requirements are provided in Sections E.10 through E.15 of the SOW. These sections provide separate criteria for groundwater versus surface water, and North and South Fills versus the three other (Small) fills. These sections also break down the O&M into the different phases of work (First Baseline, 5-Year Pump and Treat, Second Baseline, and Long-Term). The SOW Appendices also lists the analytical parameters that must be sampled and tested for during the O&M phase and the Well and River Trigger Levels that will be used to evaluate the effectiveness of the remedy.

The First Baseline Phase for the North and South Fills was completed in 2002 prior to the start-up of the GWES. For the First Baseline Phase, the groundwater at the Site showed only two (2) exceedances of the Well Trigger Levels. During the sampling events of the First Baseline Phase, several parameters exceeded the River Trigger Levels. These parameters were not believed to be associated with the landfill areas, and none of these exceedances were considered Trigger events. These initial sampling results continued to indicate that there does not appear to be elevated levels of the constituents of concern at the Site.

The hydraulic monitoring became the responsibility of the Township of Parsippany-Troy Hills in 2003. On April 21, 2005, the Group petitioned the USEPA within its rights under the Consent Decree to modify the SOW O&M requirements on the Small Fills. The USEPA responded and agreed to the requested

modifications to the O&M requirements in a letter dated July 20, 2005. As per the modified O&M requirements, the groundwater and surface water monitoring was then conducted on an annual basis.

The 5-Year Pump and Treat Phase for the North and South Fills was completed in 2007. There were no exceedances of the Well Trigger Levels at the Site in the composite samples collected as part of the 5-Year Pump and Treat Phase of the North and South Fills. These sampling results also continued to indicate that there does not appear to be elevated levels of the Site constituents of concern in the North and South Fills. Also, based on the results of the shallow groundwater level monitoring conducted in 2003, 2004, and 2005, the GWES at the North and South Fills appeared to be effective in achieving hydraulic capture of the shallow groundwater by reducing the overall shallow groundwater elevations at the Site. In 2008, the Township requested that the GWES on the North and South Fills be turned off. The request to turn the system off was approved by USEPA in July 2014. The system was shut down on August 18, 2014. The Township redeveloped the monitoring wells on the North and South Fills in April 2011 in anticipation of the Second Baseline Phase for the North and South Fills.

The First Baseline Phase for the Small Fills was completed in 2003, and Years One through Eleven of the Long-Term Phase for the Small Fills were completed in 2004 through 2014, respectively. There were no exceedances of the Well Trigger Levels at the Site in the 2003, 2004, and 2006 through 2014. In 2005, there was an exceedance of the Well Trigger Level for mercury in one (1) well on the Southwest Fill. However, it is not believed that the mercury result constitutes a trigger level exceedance because laboratory contamination of the sample was suspected, the historical results for the particular well and all other shallow groundwater monitoring wells in the Small Fills have been non-detect for mercury, and the resampling that was conducted at the well was non-detect for mercury. Bromodichloromethane exceeded the River Trigger Level in various surface water stations on several occasions in 2003, 2004, 2005, and 2006. However, bromodichloromethane is not believed to be associated with the landfill areas, and none of these exceedances are considered Trigger events. In 2007, acrylonitrile was detected at W-1(U), the furthest upstream sampling location, and not at any of the downstream locations; therefore, it was unlikely that the exceedance was associated with the landfill areas, and, as such, did not constitute a trigger level exceedance. There were no exceedances of the River Trigger Levels in 2008 through 2014.

On June 4, 2012, the Group petitioned the USEPA within its rights under the Consent Decree to modify the SOW O&M requirements on the Small Fills. The USEPA and USACE responded and agreed to the requested modifications to the O&M requirements in a letter and memorandum, respectively, dated December 12, 2012 and December 7, 2012, respectively. As per the modified O&M requirements, the groundwater and surface water monitoring will be conducted on a biennial basis with the next event scheduled for Spring 2016.

2.0 SECOND BASELINE PHASE MONITORING PROGRAM

2.1 Water Quality Monitoring Program

2.1.1 Groundwater

Prior to the First Quarter Monitoring Event, Golder Associates installed dedicated pneumatic (Well Wizard™) bladder pumps in the monitoring wells on the North and South Fills portion of the Site. The pumps were placed in the monitoring wells two weeks prior to the sampling event. Dedicated pumps could not be installed in monitoring wells M-4 and M-5 located on the North Fill and M-12 located on the South Fill due to structural issues (i.e., obstructions) identified in the monitoring wells during the pump installation. These monitoring wells were sampled using a non-dedicated submersible bladder pump. Monitoring well M-7 located on the South Fill was eliminated from the well network due to a storm prior to commencement of the Second Baseline Phase Monitoring at the Site.

During the First Quarter Monitoring Event for the Second Baseline Phase for the North and South Fills, Golder Associates collected groundwater samples from:

- Seven (7) monitoring wells on the North Fill (M-1, M-2, M-3, M-4, M-5, M-6, and M-27)
- Nine (9) monitoring wells on the South Fill (M-8, M-9A, M-10, M-11, M-12, M-13, M-14, M-15, and M-16)

The groundwater samples were analyzed for the TCL/TAL (Table 2 and Exhibit A of the SOW), including the WC list (Table 3 and Exhibit B of the SOW). The sample point identifications, sampling dates, and parameters analyzed are summarized in Table A-1 of Appendix A.

All groundwater samples were collected using the USEPA Region II low-flow purging and sampling method (USEPA, 1998), in accordance with the PMP (Appendix B of the O&M Plan). The wells were purged at a rate that ranged from approximately 0.3 to 0.4 liters per minute, with permanently installed, dedicated, pneumatic (Well Wizard™) bladder pumps. Water levels were monitored using an electronic water level meter and the pumping rate was maintained unless water level drawdown was observed, at which time the rate was reduced to maintain the initial water level as much as reasonably practicable. Field parameters were measured using a water-quality meter (Horiba U-52®) probe. Monitoring wells M-4, M-5, and M-12 were sampled using a non-dedicated submersible bladder pump.

The wells were purged until the field parameters of temperature, pH, oxidation-reduction potential (ORP), turbidity, conductivity, and dissolved oxygen (DO) stabilized over a minimum of three (3) consecutive readings measured in a flow-through cell at approximate 5-minute intervals. This data was recorded on Groundwater Low Flow Purge/Sample Field Information Forms. Stabilization was considered complete

when at least one (1) discharge tubing volume was purged and three (3) consecutive readings were within the following criteria:

- ± 10% for temperature;
- ± 0.1 standard units (std) for pH;
- ± 10 millivolts (mV) for ORP;
- ± 10% for turbidity, or under 10 nephelometric turbidity units (ntu);
- ± 3% for conductivity; and
- ± 10% for DO or ± 0.1 milligrams per liter (mg/l) if under 1.00 mg/l.

Once the parameters stabilized, the flow-through cell was disconnected and the groundwater sample was collected directly from the Teflon™-lined tubing dedicated to each Well Wizard™.

In addition to the primary groundwater samples, the following quality control (QC) samples were collected in accordance with the PMP:

- One (1) field duplicate (FD)
- Two (2) matrix spike/matrix spike duplicates (MS/MSD)
- Three (3) trip blanks
- Two (2) rinsate blanks

All samples were collected so that the preservatives were not displaced from pre-preserved sample containers, such as the 40-ml volatile organic compound (VOC) vials. Immediately after sample collection, sample bottles were placed in a cooler with wet ice and the Chain of Custody (COC) form was completed and included with the cooler. The samples were maintained at approximately 4°C and shipped via Federal Express to the analytical laboratory in accordance with the PMP.

A summary of the stabilized field measurements (i.e. temperature, pH, ORP, turbidity, conductivity, and DO) is presented in Table 1. Appendix B provides a summary of detected compounds for the First Quarter Monitoring Event for Second Baseline Phase for the North and South Fills.

2.1.2 Surface Water

Golder Associates collected samples from each surface water station in both the Rockaway and Whippany Rivers (R1 through R4 and W1 through W6) and analyzed for all TCL/TAL chemicals including the River Chemicals (Exhibits A and C of the SOW). The sample point identifications, sampling dates and parameters analyzed are summarized in Table A-1 of Appendix A.

Samples were collected using a sampling vessel (e.g., extendable pole with an attached tri-pour beaker). Golder Associates collected the samples by facing upstream, immersing the sample vessel (with a new tri-pour beaker at each location) into the water within the top twelve (12) inches, and then filling the

preserved sample containers from the sampling vessel taking care to not overflow the bottle resulting in loss of preservative. A low velocity area was chosen because high water velocity can cause the re-suspension of bottom deposits and bias the sample results. Disturbance of bottom sediments can also cause false field parameter readings. Prior to sample collection, the water quality meter (i.e., Horiba U-52®) probe was placed into the water adjacent to each sampling station and the field parameters (temperature, pH, specific conductivity, turbidity, and DO) were measured and recorded on the Surface Water Sampling Collection Form.

In addition to the primary surface water samples, the following quality control (QC) samples were collected in accordance with the PMP:

- One field duplicate sample
- One MS/MSD
- Two trip blanks

Immediately after sample collection, sample bottles were placed in a cooler with wet ice and the completed COC form. The samples were maintained at approximately 4°C and shipped via Federal Express to the analytical laboratory in accordance with the PMP.

Appendix B provides a summary of the detected compounds for the First Quarter Monitoring Event for Second Baseline Phase for the North and South Fills.

2.2 Analytical Parameters and Methodologies

The complete list of analytical parameters required as part of the Second Baseline Phase for the North and South Fills is presented in Tables 2, 3, and 4. These parameters can be subdivided into the following general groups:

- TCL/TAL Chemicals (VOCs, semi-volatile organic compounds (SVOCs), inorganics, and pesticides/polychlorinated biphenyls (PCBs));
- Well Chemicals (WC) (VOCs, SVOCs, and inorganics);
- River Chemicals (RC) (VOCs); and
- Field Parameters.

CompuChem of Cary, North Carolina performed all of the analyses in accordance with the PMP. The organic parameters (VOCs, SVOCs, pesticides, and PCBs) were analyzed in accordance with the USEPA Contract Laboratory Program (CLP) *Statement of Work for Organics Analyses Multi-Media, Multi-Concentration Organics Analysis, SOM01.2* with the exception of VOCs for the surface water samples. Inorganics were analyzed using CLP *Statement of Work for Inorganics Analyses Multi-Media, Multi-*

Concentration, ILM05.4. Golder Associates[2] analyzed the field parameters during sampling in accordance with the PMP.

The surface water VOCs were analyzed in accordance with the USEPA CLP *Statement of Work Statement of Work for Organics Analyses Multi-Media, Multi-Concentration Organics Analysis Trace Volatile Organic Compounds, SOM01.2* using a 25 ml purge volume to achieve detection limits low enough to meet the volatile compound River Trigger Levels. As part of the RC list, the surface water samples were also analyzed for three (3) additional volatile compounds: acrolein, acrylonitrile, and 2-chloroethyl vinyl ether in accordance with USEPA SW846 *Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS), Method 8260B.*

2.3 Data Validation

Golder Associates validated 100% of the analytical data collected during the First Quarter Monitoring Event for Second Baseline Phase for the North and South Fills, pursuant to the PMP. The data was validated for precision, accuracy, representativeness, comparability, and completeness (collectively known as "PARCC") using the criteria specified in the PMP, the Region II data validation guidelines defined below, and the individual analytical methodologies.

Data validation was performed in accordance with the following Region II Standard Operating Procedures (SOPs) and the individual methods listed in Tables B-7 through B-9 of the PMP:

- HW-33, Revision 1 – USEPA CLP SOW for Organic Analysis of Low/Medium Concentration of VOCs SOM01.2, August 2007
- HW-34, Revision 1 – USEPA CLP SOW for Organic Analysis of Trace Concentration of VOCs SOM01.2, August 2007
- HW-35, Revision 1 – USEPA CLP SOW for Organic Analysis of Low/Medium Concentration of SVOCs by SOM01.2, August 2007
- HW-36, Revision 1 – USEPA CLP SOW for Organic Analysis of Low/Medium Concentration of Pesticide Organic Compounds SOM01.2, August 2007
- HW-37, Revision 1 – USEPA CLP SOW for Organic Analysis of Low/Medium Concentration of Aroclor Organic Compounds SOM01.2, August 2007
- HW-2, Revision 13 – Validation of Metals for the Contract Laboratory Program (CLP) based on SOW ILM05.3, September 2006
- HW-24, Revision 2 – Validating VOCs by SW-846 Method 8260B, October 2006

Collectively, these documents are referred to as the functional guidelines. The results of the data validation are discussed in detail in the Data Validation Narrative in Appendix A. In general, the PARCC criteria specified in the PMP were achieved for all methods used to analyze the samples collected as part of the First Quarter Monitoring Event for Second Baseline Phase for the North and South Fills. Any

[2] Golder Associates is an NJDEP certified laboratory (#03027).

deficiencies noted during validation and the qualifiers that were applied to the data are summarized in Table A-2 in Appendix A.

Following data validation, the analytical data and corresponding qualifiers were summarized for each sample point. These qualified results are provided in the Summaries of Validated Data, which are located in Appendix B. In accordance with the SOW, the results were compared to the applicable trigger levels specified in Exhibits A, B, and C of the SOW (Tables 3 and 4 of this report), which are discussed in Section 2.5 of this report.

The data validation results indicate that all of the data are acceptable, with a few exceptions as further discussed in Appendix A. In some cases, the data required qualification due to quality control criteria not being achieved. However, in general, the data are deemed usable for the objectives of the O&M monitoring program.

2.4 Water Quality Monitoring Results

A summary of analyte detections for the samples collected at the Site during the First Quarter Monitoring Event for Second Baseline Phase for the North and South Fills is included in Appendix B. The summary tables for each sample point, which are grouped by analytical method and sample matrix, contain the following information:

- Detected Constituents – List of constituents that were detected at any monitoring point, along with the reported concentration;
- Qualifiers – The qualifiers that were applied to the results either by the laboratory or by Golder Associates following data validation;
- Units – The units that are associated with each analytical result; and
- Trigger Level – The levels that the analytical results were compared to, which are located in Exhibits A, B, and C of the SOW. Exceedances of the Trigger levels are shown by boldface type and underlining.

The table header contains the following information: sample identification number and date of sample collection.

2.4.1 Exceedances of Well Trigger Levels[3]

The three specific trigger events, i.e., the Type A Trigger, the Type B Trigger, and the Type C Trigger, are designed to identify when contaminants are migrating out of one or more Fill areas at levels which would necessitate activation of the groundwater extraction system at one or more Fill areas (or portions thereof as approved in writing by USEPA). The Type A and Type C Triggers are described in this section. The Type B Trigger is explained in Section 2.5.2 below.

[3] The portions of Sections 2.5.1 and 2.5.2 that explain the trigger types were taken verbatim from Appendix B of the SOW.

A "Type A Trigger" would occur, for the purposes of the SOW, when any analysis of any sample taken from any groundwater monitoring well at the Site indicates that the concentration of any Well Chemical is greater than or equal to two times the Well Trigger Level set for that Well Chemical. Groundwater extraction shall be initiated at all groundwater extraction wells associated with the groundwater extraction zones responsible for the exceedance within a USEPA-approved timeframe. Another sample may be obtained, which can be analyzed and the results reported to USEPA, within the aforementioned USEPA-approved timeframe, for consideration in determining the need for initiation of such groundwater extraction.

A "Type C Trigger" would occur, for the purposes of the SOW, whenever the concentration of any Well Chemical in groundwater, averaged over the groundwater monitoring well in any groundwater extraction zone, is equal to or greater than its respective Well Trigger Level.

There were no Type A or Type C Trigger Level exceedances during the First Quarter Monitoring Event for Second Baseline Phase for the North and South Fills, as presented on Figure 1 and in tabular format in Appendix B.

2.4.2 Exceedances of River Trigger Levels

A "Type B Trigger" would occur, for the purposes of the SOW, whenever a) the concentration of a River Chemical at any station located within one-quarter (1/4) mile downstream from any Fill area or portion thereof ("the downstream location") in either the Whippany River or the Rockaway River exceeds the River Trigger Level for that Chemical and either of the following exists: b.1) the concentration of the River Chemical at that upstream location is less than the River Trigger Level; or b.2) the concentration of a River Chemical at both the upstream and downstream locations are above the River Trigger Level but the downstream concentration is statistically greater than the upstream concentration. The statistical analysis to be used to determine if "the downstream concentration is statistically greater than the upstream concentration" stated in b.2), above, shall be a methodology selected by USEPA (or a methodology proposed by the Settling Defendants and consistent with 40 CFR 264.90 through 264.99, approved by EPA).

There were no Type B Trigger Level exceedances during the First Quarter Monitoring Event for Second Baseline Phase for the North and South Fills, as presented on Figure 1 and in tabular format in Appendix B.

3.0 CONCLUSIONS

Sampling, analysis and validation of groundwater and surface water samples from the Sharkey Landfill Site was performed in accordance with the O&M Plan and the SOW, Appendix B of the Consent Decree. The primary purpose of the Second Baseline Phase is to provide the data necessary to assess the effectiveness of the RA O&M phase at the Site. Sampling results from the First Quarter Monitoring Event for Second Baseline Phase for the North and South Fills indicate that there do not appear to be elevated levels of the Site constituents of concern that would require further operation of the GWES at the North and South Fills.

3.1 Data Quality and Acceptability

The data validation performed on the sample results from the First Quarter Monitoring Event for Second Baseline Phase for the North and South Fills indicates that all of the data, with the exception of a few parameters, are acceptable. However, some sample results required qualification due to non-conformance to the requirements of the method or the functional guidelines, as noted in Appendix A. All sample results that required qualification was performed in accordance with the functional guidelines and are summarized in Table A-2.

3.2 Water Quality

There were no exceedances of the Well Trigger Levels or River Trigger Levels at the Site in the First Quarter Monitoring Event for Second Baseline Phase for the North and South Fills. In summary, these sampling results indicate that there do not appear to be elevated levels of the Site constituents of concern in the North and South Fills.

4.0 REFERENCES

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TABLE 1
SUMMARY OF FIELD PARAMETER STABILIZATION DATA
SECOND BASELINE PHASE FOR THE NORTH AND SOUTH FILLS
SHARKEY LANDFILL
MORRIS COUNTY, NEW JERSEY

Field Parameters									
Well ID	Date Sampled	Temperature [°C]	pH [std]	Specific Conductance [mS/cm]	Turbidity [ntu]	Dissolved Oxygen [mg/l]	Redox Potential [mV]	Depth to Water [ft-btoc]	Notes
M-1	10/21/2014	14.39	7.04	4.28	7.2	0.00	-166	30.71	
M-2	10/22/2014	15.61	6.27	0.442	8.1	0.00	135	12.02	
M-3	10/21/2014	15.70	7.19	0.878	9.5	0.00	-174	15.07	MS/MSD Collected (VOCs)
M-4	10/22/2014	14.18	7.07	8.62	14.1	0.00	-160	26.83	
M-5	10/22/2014	13.47	6.73	1.530	18.0	0.00	-97	31.43	
M-6	10/21/2014	14.17	6.57	1.680	1.5	0.00	-156	18.21	FD Collected
M-8	10/21/2014	14.21	6.72	0.839	11.1	0.00	-128	13.93	
M-9A	10/22/2014	14.62	6.69	0.717	0.0	0.00	-112	9.53	
M-10	10/22/2014	14.87	6.85	0.506	7.3	0.00	-122	12.81	
M-11	10/23/2014	14.39	7.58	4.08	11.1	0.00	-197	12.91	
M-12	10/23/2014	14.46	8.23	1.49	5.7	4.64	-49	16.17	
M-13	10/23/2014	15.63	7.37	1.60	38.9	0.00	-153	16.11	
M-14	10/23/2014	14.32	7.32	1.190	19.1	0.00	-170	16.11	
M-15	10/23/2014	13.49	6.97	0.889	23.1	0.00	-142	17.64	
M-16	10/23/2014	13.65	7.45	1.940	101.0	0.00	-186	6.29	
M-27	10/21/2014	15.41	6.94	3.31	7.3	0.00	-137	16.49	MS/MSD Collected (SVOCs, PCBs, pesticides, metals, cyanide)
Surface Water Point	**Date Sampled**	**Temperature [°C]**	**pH [std]**	**Specific Conductance [mS/cm]**	**Turbidity [ntu]**	**Dissolved Oxygen [mg/l]**	**Redox Potential [mV]**	**Sample Depth [in-bws]**	**Notes**
W1 (U)	10/23/2014	13.70	7.40	0.461	14.7	14.50	NM	0 - 12	
W2 (U)	10/23/2014	14.15	8.06	0.446	25.5	8.80	NM	0 - 12	
W3 (D)	10/23/2014	13.60	7.70	0.387	18.5	5.69	NM	0 - 12	
W4 (U)	10/23/2014	13.21	7.81	0.395	19.6	5.82	NM	0 - 12	
W5 (U/D)	10/23/2014	13.10	7.74	0.398	19.5	6.09	NM	0 - 12	
W6 (D)	10/23/2014	13.49	7.46	0.400	18.4	5.47	NM	0 - 12	MS/MSD Collected
R1 (U)	10/22/2014	14.22	7.42	0.406	15.2	3.76	NM	0 - 12	FD Collected
R2 (U)	10/22/2014	13.83	7.50	0.405	2.3	4.58	NM	0 - 12	
R3 (D)	10/22/2014	13.99	7.45	0.410	14.4	3.30	NM	0 - 12	
R4 (D)	10/22/2014	15.29	7.42	0.825	10.8	3.28	NM	0 - 12	

Abbreviations
°C: degrees Celsius
std: standard units
mS/cm: milliSiemens per centimeter
ntu: nephelometric turbidity units
mg/l: milligrams per liter
mV: millivolts
ft-btoc: feet below top of casing
in-bws: inches below water surface
FD: field duplicate
MS/MSD: matrix spike/matrix spike duplicate
NM: not measured

Created by: SLJ (010715)
Checked by: SK (010815)

Notes:
1. All depths to water were measured during the synoptic round on 10/21/2014 with the exception of M-2 and M-10, which were measured on the date sampled.
2. Stream gauge present but unreadable at W-5(U/D), which is the only stream gauge present.

TABLE 2
SOW TARGET COMPOUND LIST / TARGET ANALYTE LIST
SHARKEY LANDFILL
MORRIS COUNTY, NEW JERSEY

Volatiles		
Chloromethane,	2-Butanone,	4-Methyl-2-pentanone,
Bromomethane,	1,1,1-Trichloroethane,	2-Hexanone,
Vinyl chloride,	Carbon tetrachloride,	Tetrachloroethene,
Chloroethane,	Bromodichloromethane,	Toluene,
Methylene chloride,	1,2-Dichloropropane,	1,1,2,2-Tetrachloroethane,
Acetone,	cis-1,3-Dichloropropene,	Chlorobenzene,
Carbon disulfide,	Trichloroethene,	Ethylbenzene,
1,1-Dichloroethene,	Dibromochloromethane,	Styrene,
1,1-Dichloroethane,	1,1,2-Trichloroethane,	Xylenes (total),
1,2-Dichloroethene (total),	Benzene,	1,3-Dichlorobenzene,
Chloroform,	trans-1,3-Dichloropropene,	1,4-Dichlorobenzene,
1,2-Dichloroethane,	Bromoform,	1,2-Dichlorobenzene,
		1,2,4-Trichlorobenzene
Semi-Volatiles		
Phenol,	2,4,6-Trichlorophenol,	Hexachlorobenzene,
bis(2-Chloroethyl)ether,	2,4,5-Trichlorophenol,	Pentachlorophenol,
2-Chlorophenol,	2-Chloronaphthalene,	Phenanthrene,
2-Methylphenol,	2-Nitroaniline,	Anthracene,
2,2'-oxybis(1-Chloropropane),	Dimethylphthalate,	Carbazole,
4-Methylphenol,	Acenaphthylene,	Di-n-butylphthalate,
N-Nitroso-di-n-propylamine,	2,6-Dinitrotoluene,	Fluoranthene,
Hexachloroethane,	3-Nitroaniline,	Pyrene,
Nitrobenzene,	Acenaphthene,	Butylbenzylphthalate,
Isophorone,	2,4-Dinitrophenol,	3,3'-Dichlorobenzidine,
2-Nitrophenol,	4-Nitrophenol,	Benzo(a)anthracene,
2,4-Dimethylphenol,	Dibenzofuran,	Chrysene,
bis(2-Chloroethoxy)methane,	2,4-Dinitrotoluene,	bis(2-Ethylhexyl)phthalate,
2,4-Dichlorophenol,	Diethylphthalate,	Di-n-octylphthalate,
Naphthalene,	4-Chlorophenyl-phenyl ether,	Benzo(b)fluoranthene,
4-Chloroaniline,	Fluorene,	Benzo(k)fluoranthene,
Hexachlorobutadiene,	4-Nitroaniline,	Benzo(a)pyrene,
4-Chloro-3-methylphenol,	4,6-Dinitro-2-methylphenol,	Indeno(1,2,3-cd)pyrene,
2-Methylnaphthalene,	N-Nitrosodiphenylamine,	Dibenz(a,h)anthracene,
Hexachlorocyclopentadiene,	4-Bromophenyl-phenyl ether,	Benzo(g,h,i)perylene
Pesticides/Aroclors		
alpha-BHC,	Endrin,	gamma-Chlordane,
beta-BHC,	Endosulfan sulfate,	Toxaphene,
delta-BHC,	4,4'-DDD,	Aroclor-1016,
delta-BHC (Lindane),	Endosulfan II,	Aroclor-1221,
Heptachlor,	4,4'-DDT,	Aroclor-1232,
Aldrin,	Methoxychlor,	Aroclor-1242,
Heptachlor epoxide,	Endrin ketone,	Aroclor-1248,
Endosulfan I,	Endrin aldehyde,	Aroclor-1254,
Dieldrin,	alpha-Chlordane,	Aroclor-1260
4,4'-DDE,		

TABLE 2
SOW TARGET COMPOUND LIST / TARGET ANALYTE LIST
SHARKEY LANDFILL
MORRIS COUNTY, NEW JERSEY

Analytes		
Aluminum,	Cobalt,	Potassium,
Antimony,	Copper,	Selenium,
Arsenic,	Iron,	Silver,
Barium,	Lead,	Sodium,
Beryllium,	Magnesium,	Thallium,
Cadmium,	Manganese,	Vanadium,
Calcium,	Mercury,	Zinc,
Chromium,	Nickel,	Cyanide

Source: Taken from the Sharkey Landfill SOW, Exhibit A.

TABLE 3
SOW WELL CHEMICALS AND WELL TRIGGER LEVELS
SHARKEY LANDFILL
MORRIS COUNTY, NEW JERSEY

Well Chemical	Well Trigger Level (ppb)
Total VOCs	1000
Benzene: Rockaway River Whippany River	50 100
bis(2-Ethylhexyl)phthalate	100-299[(a)] 300[(a)]
N-Nitrosodiphenylamine	10
Arsenic	50
Cadmium	10
Chromium	50
Lead	50
Mercury	2
Silver	50
Selenium	10
Barium	1000

VOCs: Volatile Organic Compounds
ppb: parts per billion

[(a)] If concentrations of bis(2-Ethylhexyl)phthalate between 100 and 299 are detected in any GWM well, an evaluation program to determine the impact of bis(2-Ethylhexyl)phthalate on the associated rivers will be initiated.
Any concentrations greater than or equal to 300 ppb shall cause the initiation of the GWE program as outlined in Section E.13 of the SOW.

Source: Taken from the Sharkey Landfill SOW, Exhibit B.

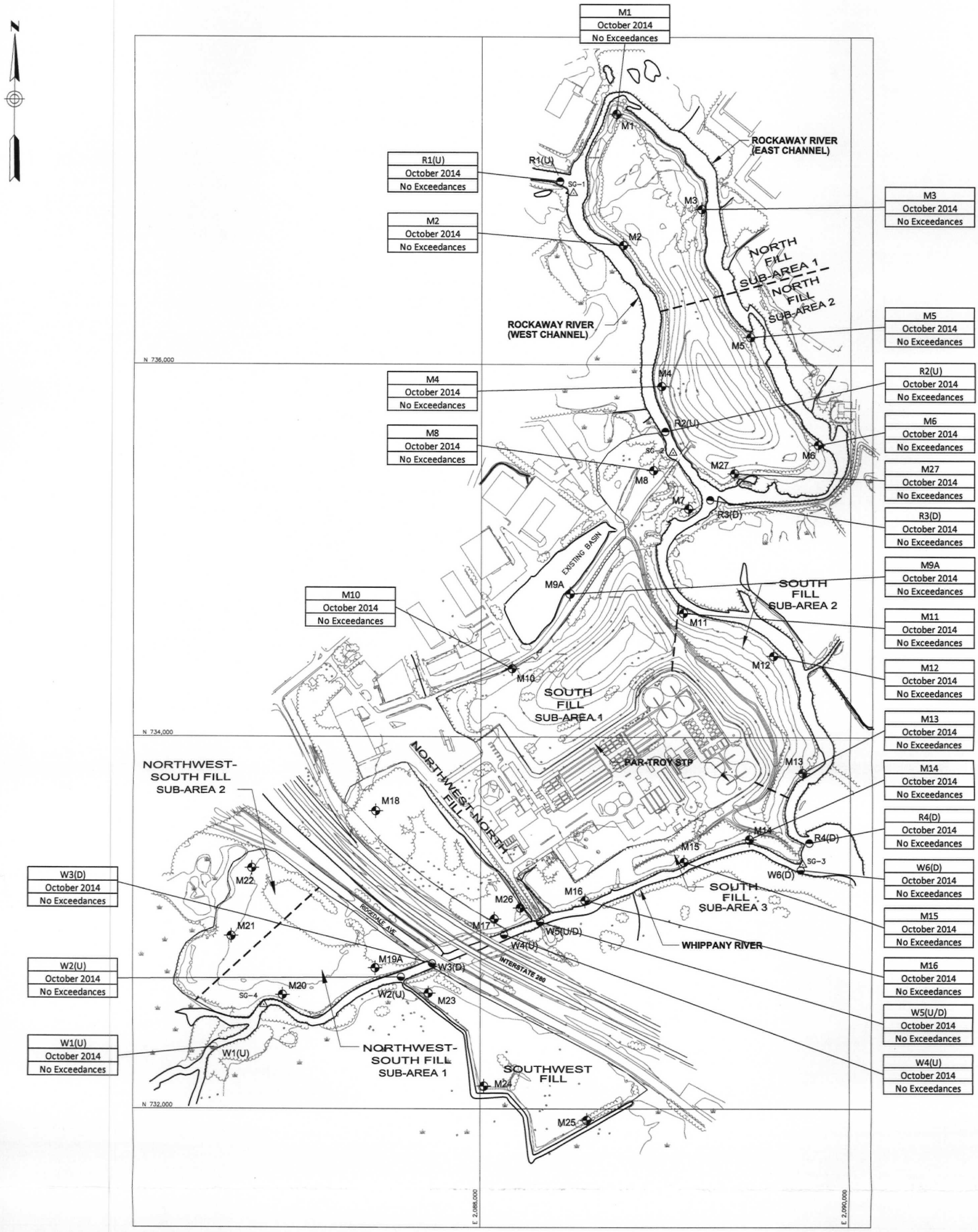
TABLE 4
SOW RIVER CHEMICALS AND RIVER TRIGGER LEVELS
SHARKEY LANDFILL
MORRIS COUNTY, NEW JERSEY

River Chemicals	River Trigger (ppb)	PQL* (ppb)
Acrolein	320	50
Acrylonitrile	0.059	8
Benzene	1.2	1
Bromoform	4.3	1
Chlorobenzene	680	1
Chlorodibromomethane	0.41	1
2-Chloroethylvinyl ether	-	5
Chloroform	5.7	1
Carbon tetrachloride	0.25	1
Dichlorobromomethane	0.27	1
1,2-Dichlorobenzene	2700	1
1,3-Dichlorobenzene	400	1
1,4-Dichlorobenzene	400	1
1,2-Dichloroethane	0.38	1
1,1-Dichloroethane	-	1
1,1-Dichloroethylene	0.57	1
1,2-Dichloropropane	0.52	1
1,3-Dichloropropylene	10	5
Ethylbenzene	3100	1
Methyl bromide	48	1
Methyl chloride	5.7	1
Methylene chloride	4.7	2
1,2-trans-Dichloroethylene	700	1
1,1,2,2-Tetrachloroethane	1.7	1
Tetrachloroethylene (PCE)	0.8	1
Toluene	6800	1
1,1,1-Trichloroethane	3100	1
1,1,2-Trichloroethane	6	1
Trichloroethylene (TCE)	2.7	1
Vinyl chloride	2	1

ppb: parts per billion
PQL: Practical Quantitation Limit

Source: Taken from the Sharkey Landfill SOW, Exhibit C.

Drawing file: 9436198S001.dwg Jan 21, 2015 – 12:10pm



LEGEND

- SG–4 △ — STAFF GAUGE LOCATION
- M14 ⊕ — GROUNDWATER MONITORING WELL DESIGNATION AND APPROXIMATE LOCATION
- R1(U) ◓ — SURFACE WATER SAMPLING STATION IN THE ROCKAWAY RIVER
- W1(U) ◓ — SURFACE WATER SAMPLING STATION IN THE WHIPPANY RIVER
- ——— — LANDFILL SUB–AREA BOUNDARY

NOTES

1.) (U) – UPSTREAM SAMPLING STATION (WITH REGARD TO NEAREST FILL AREA)
(D) – DOWNSTREAM SAMPLING STATION (WITH REGARD TO NEAREST FILL AREA)

2.) MONITORING WELL LOCATIONS ARE BASED UPON THE REMEDIAL DESIGN.

REFERENCES

1.) TOPOGRAPHIC DATA AT THE FIVE FILLS PROVIDED BY PROMAPS, MOORESTOWN, NEW JERSEY VIA CADD FILE TITLED 82598, DATED JANUARY 26, 1999, BASED ON AERIAL PHOTOGRAPHY DATED JANUARY 4, 1999. TOPOGRAPHIC DATA OUTSIDE OF THE FIVE FILLS PROVIDED BY ATLANTIS AERIAL SURVEY COMPANY, INC., BUDD LAKE, NEW JERSEY DATED OCTOBER 4, 1994, BASED ON AERIAL PHOTOGRAPHY DATED APRIL 1, 1994. TOPOGRAPHIC DATA TIE–IN PREPARED BY PROMAPS.

2.) TOPOGRAPHIC MAP DOES NOT REPRESENT REMEDIAL ACTION CONSTRUCTION IMPROVEMENTS.

250 0 250 500
scale feet

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

PROJECT

SHARKEY LANDFILL SUPERFUND SITE
MORRIS COUNTY, NEW JERSEY

TITLE

GROUNDWATER AND SURFACE WATER EXCEEDANCES OF THE SOW TRIGGER LEVELS - OCTOBER 2014

NJ Authorization #24GA28029100
Golder Associates
Mt. Laurel, New Jersey

PROJECT No.		943–6198	FILE No.		9436198S001
DESIGN	PLL	01/21/15	SCALE	AS SHOWN	REV. 0
CADD	AM	01/21/15			
CHECK	PLL	01/21/15			
REVIEW	MEC	01/21/15			

FIGURE 1

APPENDIX A

DATA VALIDATION NARRATIVE
FIRST QUARTER OF THE SECOND BASELINE PHASE - NORTH AND SOUTH FILLS

DATA VALIDATION NARRATIVE
FIRST QUARTER OF THE SECOND BASELINE PHASE, NORTH AND SOUTH FILLS
SHARKEY LANDFILL

This report presents the findings of the data validation performed on the analyses of shallow groundwater and surface water samples collected for the First Quarter of the Second Baseline Phase, North and South Fills. The monitoring event was conducted at the Sharkey Landfill Superfund Site (Site) in accordance with the Performance Monitoring Plan for Remedial Action (PMP, December 2005) for the Site. Samples for the event were collected October 21, 2014 through October 23, 2014. The chemical data for samples collected at the Site were validated to identify quality issues which could affect the use of the data for decision making purposes.

A total of sixteen (16) groundwater and ten (10) surface water samples, as well as two (2) field duplicates, three (3) matrix spike / matrix spike duplicates (MS/MSDs) two (2) rinsate blanks, and five (5) trip blanks for Quality Control (QC) purposes, were collected for chemical analysis during the monitoring event. The groundwater samples were analyzed for the TCL Chemicals[1] of Volatile Organic Compounds (VOCs), Semivolatile Organic Compounds (SVOCs), Pesticides/PCBs, and Metals, including the Well Chemicals (WC) List[2], as listed in Tables 2 and 3, respectively, of the main report. The surface water samples were analyzed for the TCL Chemicals of VOCs, SVOCs, Pesticides/PCBs, and Metals, including the River Chemicals (RC) List[3], as listed in Tables 2 and 4, respectively, of the main report. Field duplicates were analyzed for the same parameters as their parent sample and the trip blank samples were analyzed for VOCs only. CompuChem of Cary, North Carolina performed all chemical analyses following USEPA method guidelines:

- VOCs, SVOCs, and Pesticides/PCBs following USEPA Contract Laboratory Program (CLP) Statement of Work (SOW) for Multi-Media, Multi-Concentration Organics Analysis SOM01.2, October 2006;
- RC List VOCs following USEPA CLP SOW for Low Concentration Organic Analysis SOM01.2 Trace, October 2006;
- RC List VOCs (acrolein, acrylonitrile, and 2-chloroethyl vinyl ether only) following USEPA SW846 Method 8260B Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) (December, 1996); and,
- Metals following USEPA CLP SOW for Multi-Media, Multi-Concentration Inorganics Analysis ILM05.4, December 2006.

Information regarding the sample point identifications, analytical parameters, QC samples, sampling dates, and contract laboratory sample delivery group (SDG) designations are summarized in Table A-1.

[1] Exhibit A of the Site SOW identifies the TCL Chemicals.
[2] Exhibit B of the Site SOW identifies the Well Chemicals.
[3] Exhibit C of the Site SOW identifies the River Chemicals.

The laboratory data were validated for precision, accuracy, representativeness, comparability, and completeness (PARCCs) and to verify data usability. Validation was performed on 100% of the data submitted by the Laboratory. Data validation was performed in accordance with the following documents:

- USEPA Region II Standard Operating Procedure (SOP) No. HW-33, Revision 1 – USEPA Contract Laboratory Program Statement of Work for Organic Analysis of Low/Medium Concentration of Volatile Organic Compounds SOM01.2 Data Validation, August 2007;
- USEPA Region II SOP No. HW-34, Revision 1 USEPA Contract Laboratory Program Statement of Work for Organic Analysis of Trace Concentration of Volatile Organic Compounds SOM01.2 Data Validation, August 2007;
- USEPA Region II SOP No. HW-24, Revision 1, Validating Volatile Organic Compounds by SW-846 Method 8260B, June 1999;
- USEPA Region II SOP No. HW-35, Revision 1, USEPA Contract Laboratory Program Statement of Work for Organic Analysis of Low/Medium Concentration Semivolatile Organic Compounds SOM01.2, August 2007;
- USEPA Region II SOP No. HW-36, Revision 1, USEPA Contract Laboratory Program Statement of Work for Organic Analysis of Low/Medium Concentration of Pesticide Organic Compounds SOM01.2, August 2007;
- USEPA Region II SOP No. HW-37, Revision 1, USEPA Contract Laboratory Program Statement of Work for Organic Analysis of Low/Medium Concentration of Aroclor Organic Compounds SOM01.2, August 2007; and,
- USEPA Region II SOP No. HW-2, Revision 13 – Validation of Metals for the Contract Laboratory Program, September 2006.

In general, chemical results for the samples collected at the Site were qualified on the basis of outlying precision or accuracy parameters, or on the basis of professional judgment. The following definitions provide brief explanations of the qualifiers which may have been assigned to data during the data validation process.

J	The analyte was reported above the method detection limit; however, the associated numerical value is the approximate concentration of the analyte in the sample.
U	The analyte was analyzed for, but was not detected above the method detection limit.
UJ	The analyte was not detected above the method detection limit. The associated quality control measurements indicate the quantitation limit is approximate.
R	The sample result was rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria.

In general, the data generated during the monitoring event met the QC criteria established in the respective USEPA methods and Region II Data Validation Standard Operating Procedures (SOPs). The following bulleted items highlight qualifications to specific parameters. Although these qualifications were applied to some of the samples collected at the Site, the qualifications may not have been required or

applied to all samples collected. Table A-2 summarizes all qualifications applied to the data, with applicable qualifier codes.

- Detect groundwater results for 1,4-dioxane were qualified as estimated (J) and non-detect groundwater results for 1,4-dioxane were rejected (R) when initial calibration relative response factors (RRFs) were below QC criteria.
- Surface water results for acrolein, acrylonitrile, and 2-chloroethyl vinyl ether were qualified as estimated (UJ) when the initial calibration or continuing calibration relative response factors (RRFs) were below QC criteria.
- Certain non-detect groundwater VOC and SVOC results were qualified as estimated (UJ) when the continuing calibration verification (CCV) percent differences were outside QC criteria.
- Groundwater SVOC results for 2,4-dinitrophenol, 4-nitrophenol, and pentachlorophenol were rejected (R) when the compounds were not detected in the closing CCV samples.
- Groundwater results for certain SVOCs, pesticides, and PCBs were qualified as estimated (J/UJ) when surrogate recoveries were below QC criteria.
- Groundwater PCB results for M-27 and M-6 were rejected (R) when surrogate recoveries were grossly below QC criteria.
- Certain groundwater results for pesticides were qualified as estimated (J) or qualified as non-detect (U) at the RL when the percent difference between analysis columns was above QC criteria, depending on the magnitude of the difference between the columns.
- Beta-BHC results for groundwater samples M-1, M-27, M-4, and M-11 were rejected (R) when the percent difference between columns was greater than 100% and the sample result was greater than the RL.
- The cyanide result for surface water sample W5-UD was qualified as estimated (UJ) when the sample was received at a pH of 11, which is below the preservation requirement.
- Certain groundwater results for thallium were qualified as non-detect (U) at the reporting limit (RL) due to preparation blank contamination.
- Certain groundwater results for copper, potassium, and zinc were qualified as non-detect (U) at the RL due to rinsate blank contamination.
- Certain groundwater and surface water results for barium were qualified as non-detect (U) at the RL due to initial calibration blank contamination.
- Certain surface water results for potassium, beryllium, and nickel were qualified as non-detect (U) at the RL due to continuing calibration blank contamination.
- Certain sodium and potassium results for ground water and surface water were qualified as estimated (J) when the serial dilution percent difference was above QC criteria.

Based on the data validation, the analytical data for samples collected at the Site were determined to be acceptable (including estimated data) for their intended use, with the exception of data qualified as R (rejected). Generally, acceptable levels of accuracy and precision were achieved for the data, based on laboratory control sample (LCS), MS/MSD, field duplicate and surrogate recoveries. In addition, the data completeness (i.e., the ratio of the amount of valid data obtained to the amount expected, including estimated (J/UJ) data) was 98.2%, which meets the completeness goal specified in the PMP for the Site.

TABLE A-1
SAMPLE POINT IDENTIFICATIONS
FIRST QUARTER OF THE SECOND BASELINE PHASE, NORTH AND SOUTH FILLS
SHARKEY LANDFILL

Lab SDG	Field ID	Matrix	Sample Date	WC VOCs[1]	RC VOCs[2]	SVOCs[1]	Pesticides /PCBs[1]	Metals[3]	MS/MSD	Duplicate
1410130	FDGW-102114	GW	10/21/2014	x		x	x	x		x (M-19A)
1410130	M-1	GW	10/21/2014	x		x	x	x		
1410130	M-3	GW	10/21/2014	x		x	x	x	x	
1410130	M-27	GW	10/21/2014	x		x	x	x	x	
1410130	M-8	GW	10/21/2014	x		x	x	x		
1410130	M-6	GW	10/21/2014	x		x	x	x		
1410130	M-9A	GW	10/22/2014	x		x	x	x		
1410130	M-4	GW	10/22/2014	x		x	x	x		
1410130	M-10	GW	10/22/2014	x		x	x	x		
1410130	M-2	GW	10/22/2014	x		x	x	x		
1410130	M-5-102214	GW	10/22/2014	x		x	x	x		
1410130	M-12	GW	10/23/2014	x		x	x	x		
1410130	M-16	GW	10/23/2014	x		x	x	x		
1410130	M-11	GW	10/23/2014	x		x	x	x		
1410130	M-15	GW	10/23/2014	x		x	x	x		
1410130	M-13	GW	10/23/2014	x		x	x	x		
1410130	M-14	GW	10/23/2014	x		x	x	x		
1410130	M-5-102314	GW	10/23/2014	x		x	x			
1410130	M-5-102214	GW	10/22/2014					x		
1410141, 1410143	FDSW-102214	SW	10/22/2014		x	x	x	x		x (R1-U)
1410141, 1410143	R1-U	SW	10/22/2014		x	x	x	x		
1410141, 1410143	R2-U	SW	10/22/2014		x	x	x	x		
1410141, 1410143	R3-D	SW	10/22/2014		x	x	x			
1410141, 1410143	R4-D	SW	10/22/2014		x	x	x	x		
1410141, 1410143	W1-U	SW	10/23/2014		x	x	x	x		
1410141, 1410143	W2-U	SW	10/23/2014		x	x	x	x		
1410141, 1410143	W3-D	SW	10/23/2014		x	x	x	x		
1410141, 1410143	W4-U	SW	10/23/2014		x	x	x	x		
1410141, 1410143	W5-UD	SW	10/23/2014		x	x	x	x		
1410141, 1410143	W6-D	SW	10/23/2014		x	x	x	x	x	
1410141, 1410143	R3-D-102314	SW	10/23/2014					x		
Field Blanks										
1410130	TBGW-102114	TB	10/21/2014	x						
1410130	TBGW-102214	TB	10/22/2014	x						
1410130	RBGW-102214	RB	10/22/2014	x		x	x	x		
1410130	TBGW-102314	TB	10/23/2014	x						
1410130	RBGW-102314	RB	10/23/2014	x		x	x	x		
1410141, 1410143	TBSW-102214	TB	10/22/2014		x					
1410141, 1410143	TBSW-102314	TB	10/23/2014		x					

Notes:

All samples to be analyzed for chemical analysis were shipped to CompuChem of Cary, North Carolina.

[1]VOCs, SVOCs, and Pesticides/PCBs following USEPA Contract Laboratory Program (CLP) Statement of Work (SOW) for Multi-Media, Multi-Concentration Organics Analysis SOM01.2, October 2006.

[2]RC list VOCs following USEPA CLP SOW for Low Concentration Organic Analysis SOM01.2 (trace) and USEPA SW846 Method 8260B Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) (December 1996) for acrolein, acrylonitrile, and 2-chloroethyl vinyl ether only.

[3]Metals including cyanide by USEPA CLP SOW for Multi-Media, Multi-Concentration Inorganics Analysis ILM05.4, December 2006.

Abbreviations:

GW = Ground Water
MS/MSD = Matrix Spike/ Matrix Spike Duplicate
RB = Rinse Blank
RC = River Chemicals
SDG = Sample Delivery Group
SVOCs = Semivolatile Organic Compounds
SW = Surface Water
TB = Trip Blank
VOCs = Volatile Organic Compounds
WC = Well Chemicals

TABLE A-2
SUMMARY OF DATA QUALIFICATIONS
FIRST QUARTER OF THE SECOND BASELINE PHASE, NORTH AND SOUTH FILLS
SHARKEY LANDFILL

SDG	Field ID	Matrix	Analysis	Analyte	New Result	New RL	Qual	Golder Qual Code	Comments
1410130	FDGW-102114	GW	SVOCs	2,4-Dinitrophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-1	GW	SVOCs	2,4-Dinitrophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-3	GW	SVOCs	2,4-Dinitrophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-27	GW	SVOCs	2,4-Dinitrophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-8	GW	SVOCs	2,4-Dinitrophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-6	GW	SVOCs	2,4-Dinitrophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-9A	GW	SVOCs	2,4-Dinitrophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-4	GW	SVOCs	2,4-Dinitrophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-10	GW	SVOCs	2,4-Dinitrophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-2	GW	SVOCs	2,4-Dinitrophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-12	GW	SVOCs	2,4-Dinitrophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-16	GW	SVOCs	2,4-Dinitrophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-11	GW	SVOCs	2,4-Dinitrophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-15	GW	SVOCs	2,4-Dinitrophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-13	GW	SVOCs	2,4-Dinitrophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-14	GW	SVOCs	2,4-Dinitrophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-5-102314	GW	SVOCs	2,4-Dinitrophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	FDGW-102114	GW	SVOCs	4-Nitrophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-1	GW	SVOCs	4-Nitrophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-3	GW	SVOCs	4-Nitrophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-27	GW	SVOCs	4-Nitrophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-8	GW	SVOCs	4-Nitrophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-6	GW	SVOCs	4-Nitrophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-9A	GW	SVOCs	4-Nitrophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-4	GW	SVOCs	4-Nitrophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-10	GW	SVOCs	4-Nitrophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-2	GW	SVOCs	4-Nitrophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-12	GW	SVOCs	4-Nitrophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-16	GW	SVOCs	4-Nitrophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-11	GW	SVOCs	4-Nitrophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-15	GW	SVOCs	4-Nitrophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-13	GW	SVOCs	4-Nitrophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-14	GW	SVOCs	4-Nitrophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-5-102314	GW	SVOCs	4-Nitrophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	FDGW-102114	GW	SVOCs	Pentachlorophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-1	GW	SVOCs	Pentachlorophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-3	GW	SVOCs	Pentachlorophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-27	GW	SVOCs	Pentachlorophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-8	GW	SVOCs	Pentachlorophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-6	GW	SVOCs	Pentachlorophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-9A	GW	SVOCs	Pentachlorophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-4	GW	SVOCs	Pentachlorophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-10	GW	SVOCs	Pentachlorophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-2	GW	SVOCs	Pentachlorophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-12	GW	SVOCs	Pentachlorophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-16	GW	SVOCs	Pentachlorophenol	-	-	R	CRD	Not detected in associated CCV samples

TABLE A-2
SUMMARY OF DATA QUALIFICATIONS
FIRST QUARTER OF THE SECOND BASELINE PHASE, NORTH AND SOUTH FILLS
SHARKEY LANDFILL

SDG	Field ID	Matrix	Analysis	Analyte	New Result	New RL	Qual	Golder Qual Code	Comments
1410130	M-11	GW	SVOCs	Pentachlorophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-15	GW	SVOCs	Pentachlorophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-13	GW	SVOCs	Pentachlorophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-14	GW	SVOCs	Pentachlorophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-5-102314	GW	SVOCs	Pentachlorophenol	-	-	R	CRD	Not detected in associated CCV samples
1410130	M-1	GW	VOCs	1,4-Dioxane	-	-	R	IRF	Initial calibration RRF below QC criteria
1410130	M-3	GW	VOCs	1,4-Dioxane	-	-	R	IRF	Initial calibration RRF below QC criteria
1410130	M-6	GW	VOCs	1,4-Dioxane	-	-	R	IRF	Initial calibration RRF below QC criteria
1410130	M-8	GW	VOCs	1,4-Dioxane	-	-	R	IRF	Initial calibration RRF below QC criteria
1410130	M-27	GW	VOCs	1,4-Dioxane	-	-	J	IRF	Initial calibration RRF below QC criteria
1410130	FDGW-102114	GW	VOCs	1,4-Dioxane	-	-	R	IRF	Initial calibration RRF below QC criteria
1410130	M-9A	GW	VOCs	1,4-Dioxane	-	-	R	IRF	Initial calibration RRF below QC criteria
1410130	M-4	GW	VOCs	1,4-Dioxane	-	-	J	IRF	Initial calibration RRF below QC criteria
1410130	M-10	GW	VOCs	1,4-Dioxane	-	-	J	IRF	Initial calibration RRF below QC criteria
1410130	M-2	GW	VOCs	1,4-Dioxane	-	-	R	IRF	Initial calibration RRF below QC criteria
1410130	M-12	GW	VOCs	1,4-Dioxane	-	-	R	IRF	Initial calibration RRF below QC criteria
1410130	M-16	GW	VOCs	1,4-Dioxane	-	-	R	IRF	Initial calibration RRF below QC criteria
1410130	M-11	GW	VOCs	1,4-Dioxane	-	-	R	IRF	Initial calibration RRF below QC criteria
1410130	M-15	GW	VOCs	1,4-Dioxane	-	-	R	IRF	Initial calibration RRF below QC criteria
1410130	M-14	GW	VOCs	1,4-Dioxane	-	-	J	IRF	Initial calibration RRF below QC criteria
1410130	M-13	GW	VOCs	1,4-Dioxane	-	-	J	IRF	Initial calibration RRF below QC criteria
1410130	M-5-102214	GW	VOCs	1,4-Dioxane	-	-	R	IRF	Initial calibration RRF below QC criteria
1410130	M-1	GW	VOCs	Bromomethane	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-3	GW	VOCs	Bromomethane	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-6	GW	VOCs	Bromomethane	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-8	GW	VOCs	Bromomethane	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-27	GW	VOCs	Bromomethane	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	FDGW-102114	GW	VOCs	Bromomethane	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-9A	GW	VOCs	Bromomethane	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-4	GW	VOCs	Bromomethane	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-10	GW	VOCs	Bromomethane	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-2	GW	VOCs	Bromomethane	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-12	GW	VOCs	Bromomethane	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-16	GW	VOCs	Bromomethane	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-11	GW	VOCs	Bromomethane	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-15	GW	VOCs	Bromomethane	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-14	GW	VOCs	Bromomethane	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-13	GW	VOCs	Bromomethane	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-5-102214	GW	VOCs	Bromomethane	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-1	GW	VOCs	1,2,4-Trichlorobenzene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-3	GW	VOCs	1,2,4-Trichlorobenzene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-6	GW	VOCs	1,2,4-Trichlorobenzene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-8	GW	VOCs	1,2,4-Trichlorobenzene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-27	GW	VOCs	1,2,4-Trichlorobenzene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	FDGW-102114	GW	VOCs	1,2,4-Trichlorobenzene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-9A	GW	VOCs	1,2,4-Trichlorobenzene	-	-	UJ	CRD	CCV %D outside QC criteria

TABLE A-2
SUMMARY OF DATA QUALIFICATIONS
FIRST QUARTER OF THE SECOND BASELINE PHASE, NORTH AND SOUTH FILLS
SHARKEY LANDFILL

SDG	Field ID	Matrix	Analysis	Analyte	New Result	New RL	Qual	Golder Qual Code	Comments
1410130	M-4	GW	VOCs	1,2,4-Trichlorobenzene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-10	GW	VOCs	1,2,4-Trichlorobenzene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-2	GW	VOCs	1,2,4-Trichlorobenzene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-12	GW	VOCs	1,2,4-Trichlorobenzene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-16	GW	VOCs	1,2,4-Trichlorobenzene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-11	GW	VOCs	1,2,4-Trichlorobenzene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-15	GW	VOCs	1,2,4-Trichlorobenzene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-14	GW	VOCs	1,2,4-Trichlorobenzene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-13	GW	VOCs	1,2,4-Trichlorobenzene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-5-102214	GW	VOCs	1,2,4-Trichlorobenzene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-1	GW	SVOCs	2-Nitrophenol	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-3	GW	SVOCs	2-Nitrophenol	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-6	GW	SVOCs	2-Nitrophenol	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-8	GW	SVOCs	2-Nitrophenol	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-27	GW	SVOCs	2-Nitrophenol	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	FDGW-102114	GW	SVOCs	2-Nitrophenol	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-9A	GW	SVOCs	2-Nitrophenol	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-4	GW	SVOCs	2-Nitrophenol	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-10	GW	SVOCs	2-Nitrophenol	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-2	GW	SVOCs	2-Nitrophenol	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-12	GW	SVOCs	2-Nitrophenol	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-16	GW	SVOCs	2-Nitrophenol	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-11	GW	SVOCs	2-Nitrophenol	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-15	GW	SVOCs	2-Nitrophenol	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-14	GW	SVOCs	2-Nitrophenol	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-13	GW	SVOCs	2-Nitrophenol	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-5-102314	GW	SVOCs	2-Nitrophenol	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-1	GW	SVOCs	2,6-Dinitrotoluene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-3	GW	SVOCs	2,6-Dinitrotoluene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-6	GW	SVOCs	2,6-Dinitrotoluene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-8	GW	SVOCs	2,6-Dinitrotoluene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-27	GW	SVOCs	2,6-Dinitrotoluene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	FDGW-102114	GW	SVOCs	2,6-Dinitrotoluene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-9A	GW	SVOCs	2,6-Dinitrotoluene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-4	GW	SVOCs	2,6-Dinitrotoluene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-10	GW	SVOCs	2,6-Dinitrotoluene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-2	GW	SVOCs	2,6-Dinitrotoluene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-12	GW	SVOCs	2,6-Dinitrotoluene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-16	GW	SVOCs	2,6-Dinitrotoluene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-11	GW	SVOCs	2,6-Dinitrotoluene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-15	GW	SVOCs	2,6-Dinitrotoluene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-14	GW	SVOCs	2,6-Dinitrotoluene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-13	GW	SVOCs	2,6-Dinitrotoluene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-5-102314	GW	SVOCs	2,6-Dinitrotoluene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-1	GW	SVOCs	2,4-Dinitrotoluene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-3	GW	SVOCs	2,4-Dinitrotoluene	-	-	UJ	CRD	CCV %D outside QC criteria

TABLE A-2
SUMMARY OF DATA QUALIFICATIONS
FIRST QUARTER OF THE SECOND BASELINE PHASE, NORTH AND SOUTH FILLS
SHARKEY LANDFILL

SDG	Field ID	Matrix	Analysis	Analyte	New Result	New RL	Qual	Golder Qual Code	Comments
1410130	M-6	GW	SVOCs	2,4-Dinitrotoluene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-8	GW	SVOCs	2,4-Dinitrotoluene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-27	GW	SVOCs	2,4-Dinitrotoluene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	FDGW-102114	GW	SVOCs	2,4-Dinitrotoluene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-9A	GW	SVOCs	2,4-Dinitrotoluene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-4	GW	SVOCs	2,4-Dinitrotoluene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-10	GW	SVOCs	2,4-Dinitrotoluene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-2	GW	SVOCs	2,4-Dinitrotoluene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-12	GW	SVOCs	2,4-Dinitrotoluene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-16	GW	SVOCs	2,4-Dinitrotoluene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-11	GW	SVOCs	2,4-Dinitrotoluene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-15	GW	SVOCs	2,4-Dinitrotoluene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-14	GW	SVOCs	2,4-Dinitrotoluene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-13	GW	SVOCs	2,4-Dinitrotoluene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-5-102314	GW	SVOCs	2,4-Dinitrotoluene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-1	GW	SVOCs	Di-n-octyl phthalate	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-3	GW	SVOCs	Di-n-octyl phthalate	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-6	GW	SVOCs	Di-n-octyl phthalate	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-8	GW	SVOCs	Di-n-octyl phthalate	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-27	GW	SVOCs	Di-n-octyl phthalate	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	FDGW-102114	GW	SVOCs	Di-n-octyl phthalate	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-9A	GW	SVOCs	Di-n-octyl phthalate	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-4	GW	SVOCs	Di-n-octyl phthalate	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-10	GW	SVOCs	Di-n-octyl phthalate	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-2	GW	SVOCs	Di-n-octyl phthalate	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-12	GW	SVOCs	Di-n-octyl phthalate	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-16	GW	SVOCs	Di-n-octyl phthalate	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-11	GW	SVOCs	Di-n-octyl phthalate	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-15	GW	SVOCs	Di-n-octyl phthalate	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-14	GW	SVOCs	Di-n-octyl phthalate	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-13	GW	SVOCs	Di-n-octyl phthalate	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-5-102314	GW	SVOCs	Di-n-octyl phthalate	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-1	GW	SVOCs	Indeno(1,2,3-cd)pyrene	-	-	UJ	CRD / SL	CCV %D outside QC criteria / Surrogate recovery below QC criteria
1410130	M-3	GW	SVOCs	Indeno(1,2,3-cd)pyrene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-6	GW	SVOCs	Indeno(1,2,3-cd)pyrene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-8	GW	SVOCs	Indeno(1,2,3-cd)pyrene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-27	GW	SVOCs	Indeno(1,2,3-cd)pyrene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	FDGW-102114	GW	SVOCs	Indeno(1,2,3-cd)pyrene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-9A	GW	SVOCs	Indeno(1,2,3-cd)pyrene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-4	GW	SVOCs	Indeno(1,2,3-cd)pyrene	-	-	UJ	CRD / SL	CCV %D outside QC criteria / Surrogate recovery below QC criteria
1410130	M-10	GW	SVOCs	Indeno(1,2,3-cd)pyrene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-2	GW	SVOCs	Indeno(1,2,3-cd)pyrene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-12	GW	SVOCs	Indeno(1,2,3-cd)pyrene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-16	GW	SVOCs	Indeno(1,2,3-cd)pyrene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-11	GW	SVOCs	Indeno(1,2,3-cd)pyrene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-15	GW	SVOCs	Indeno(1,2,3-cd)pyrene	-	-	UJ	CRD	CCV %D outside QC criteria

TABLE A-2
SUMMARY OF DATA QUALIFICATIONS
FIRST QUARTER OF THE SECOND BASELINE PHASE, NORTH AND SOUTH FILLS
SHARKEY LANDFILL

SDG	Field ID	Matrix	Analysis	Analyte	New Result	New RL	Qual	Golder Qual Code	Comments
1410130	M-14	GW	SVOCs	Indeno(1,2,3-cd)pyrene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-13	GW	SVOCs	Indeno(1,2,3-cd)pyrene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-5-102314	GW	SVOCs	Indeno(1,2,3-cd)pyrene	-	-	UJ	CRD	CCV %D outside QC criteria
1410130	M-1	GW	SVOCs	Benzo(b)fluoranthene	-	-	UJ	SL	Surrogate recovery below QC criteria
1410130	M-1	GW	SVOCs	Benzo(k)fluoranthene	-	-	UJ	SL	Surrogate recovery below QC criteria
1410130	M-1	GW	SVOCs	Benzo(a)pyrene	-	-	UJ	SL	Surrogate recovery below QC criteria
1410130	M-1	GW	SVOCs	Dibenz(a,h)anthracene	-	-	UJ	SL	Surrogate recovery below QC criteria
1410130	M-1	GW	SVOCs	Benzo(g,h,i)perylene	-	-	UJ	SL	Surrogate recovery below QC criteria
1410130	M-4	GW	SVOCs	Benzo(b)fluoranthene	-	-	UJ	SL	Surrogate recovery below QC criteria
1410130	M-4	GW	SVOCs	Benzo(k)fluoranthene	-	-	UJ	SL	Surrogate recovery below QC criteria
1410130	M-4	GW	SVOCs	Benzo(a)pyrene	-	-	UJ	SL	Surrogate recovery below QC criteria
1410130	M-4	GW	SVOCs	Dibenz(a,h)anthracene	-	-	UJ	SL	Surrogate recovery below QC criteria
1410130	M-4	GW	SVOCs	Benzo(g,h,i)perylene	-	-	UJ	SL	Surrogate recovery below QC criteria
1410130	FDGW-102114	GW	Pest	All pesticide results	-	-	UJ	SL	Surrogate recovery below QC criteria
1410130	M-6	GW	Pest	All pesticide results	-	-	UJ	SL	Surrogate recovery below QC criteria
1410130	FDGW-102114	GW	PCBs	All PCB results	-	-	UJ	SL	Surrogate recovery below QC criteria
1410130	M-11	GW	PCBs	All PCB results	-	-	UJ	SL	Surrogate recovery below QC criteria
1410130	M-16	GW	PCBs	All PCB results	-	-	UJ	SL	Surrogate recovery below QC criteria
1410130	M-2	GW	PCBs	All PCB results	-	-	UJ	SL	Surrogate recovery below QC criteria
1410130	M-3	GW	PCBs	All PCB results	-	-	J/UJ	SL	Surrogate recovery below QC criteria
1410130	M-27	GW	PCBs	All PCB results	-	-	R	SL	Surrogate grossly recovery below QC criteria
1410130	M-6	GW	PCBs	All PCB results	-	-	R	SL	Surrogate grossly recovery below QC criteria
1410130	M-1	GW	Pest	beta-BHC	-	-	R	PD	%D between columns > 100% and result greater than the CRQL
1410130	M-1	GW	Pest	delta-BHC	0.0472	-	U	PD	%D between columns > 50% and result less than CRQL
1410130	M-1	GW	Pest	Endrin	0.0943	-	U	PD	%D between columns > 50% and result less than CRQL
1410130	M-1	GW	Pest	alpha-Chlordane	0.0472	-	U	PD	%D between columns > 50% and result less than CRQL
1410130	M-3	GW	Pest	gamma-BHC (Lindane)	0.0476	-	U	PD	%D between columns > 50% and result less than CRQL
1410130	M-3	GW	Pest	4,4'-DDT	0.0952	-	U	PD	%D between columns > 50% and result less than CRQL
1410130	M-3	GW	Pest	gamma-Chlordane	0.0476	-	U	PD	%D between columns > 50% and result less than CRQL
1410130	M-27	GW	Pest	beta-BHC	-	-	R	PD	%D between columns > 100% and result greater than the CRQL
1410130	M-4	GW	Pest	beta-BHC	-	-	R	PD	%D between columns > 100% and result greater than the CRQL
1410130	M-4	GW	Pest	gamma-BHC (Lindane)	-	-	J	PD	%D between columns > 25%
1410130	M-11	GW	Pest	beta-BHC	-	-	R	PD	%D between columns > 100% and result greater than the CRQL
1410130	M-3	GW	Inorganics	Barium	200	-	U	ICB	Initial calibration blank contamination
1410130	M-8	GW	Inorganics	Barium	200	-	U	ICB	Initial calibration blank contamination
1410130	M-9A	GW	Inorganics	Barium	200	-	U	ICB	Initial calibration blank contamination
1410130	M-10	GW	Inorganics	Barium	200	-	U	ICB	Initial calibration blank contamination
1410130	M-2	GW	Inorganics	Barium	200	-	U	ICB	Initial calibration blank contamination
1410130	M-12	GW	Inorganics	Barium	200	-	U	ICB	Initial calibration blank contamination
1410130	M-15	GW	Inorganics	Barium	200	-	U	ICB	Initial calibration blank contamination
1410130	M-16	GW	Inorganics	Copper	25	-	U	RB	Rinsate blank contamination
1410130	M-13	GW	Inorganics	Copper	25	-	U	RB	Rinsate blank contamination
1410130	M-10	GW	Inorganics	Potassium	5000	-	U	RB	Rinsate blank contamination
1410130	M-12	GW	Inorganics	Potassium	5000	-	U	RB	Rinsate blank contamination
1410130	M-27	GW	Inorganics	Thallium	25	-	U	PB	Preparation blank contamination
1410130	FDGW-102114	GW	Inorganics	Thallium	25	-	U	PB	Preparation blank contamination

TABLE A-2
SUMMARY OF DATA QUALIFICATIONS
FIRST QUARTER OF THE SECOND BASELINE PHASE, NORTH AND SOUTH FILLS
SHARKEY LANDFILL

SDG	Field ID	Matrix	Analysis	Analyte	New Result	New RL	Qual	Golder Qual Code	Comments
1410130	M-9A	GW	Inorganics	Thallium	25	-	U	PB	Preparation blank contamination
1410130	M-16	GW	Inorganics	Thallium	25	-	U	PB	Preparation blank contamination
1410130	M-11	GW	Inorganics	Thallium	25	-	U	PB	Preparation blank contamination
1410130	M-9A	GW	Inorganics	Zinc	60	-	U	RB	Rinsate blank contamination
1410130	M-4	GW	Inorganics	Zinc	60	-	U	RB	Rinsate blank contamination
1410130	M-2	GW	Inorganics	Zinc	-	-	J	RB	Rinsate blank contamination
1410130	FDGW-102114	GW	Inorganics	Sodium	-	-	J	SD	Serial dilution %D above QC criteria
1410130	M-1	GW	Inorganics	Sodium	-	-	J	SD	Serial dilution %D above QC criteria
1410130	M-3	GW	Inorganics	Sodium	-	-	J	SD	Serial dilution %D above QC criteria
1410130	M-27	GW	Inorganics	Sodium	-	-	J	SD	Serial dilution %D above QC criteria
1410130	M-8	GW	Inorganics	Sodium	-	-	J	SD	Serial dilution %D above QC criteria
1410130	M-6	GW	Inorganics	Sodium	-	-	J	SD	Serial dilution %D above QC criteria
1410130	M-9A	GW	Inorganics	Sodium	-	-	J	SD	Serial dilution %D above QC criteria
1410130	M-4	GW	Inorganics	Sodium	-	-	J	SD	Serial dilution %D above QC criteria
1410130	M-10	GW	Inorganics	Sodium	-	-	J	SD	Serial dilution %D above QC criteria
1410130	M-2	GW	Inorganics	Sodium	-	-	J	SD	Serial dilution %D above QC criteria
1410130	M-5-102214	GW	Inorganics	Sodium	-	-	J	SD	Serial dilution %D above QC criteria
1410130	M-12	GW	Inorganics	Sodium	-	-	J	SD	Serial dilution %D above QC criteria
1410130	M-16	GW	Inorganics	Sodium	-	-	J	SD	Serial dilution %D above QC criteria
1410130	M-11	GW	Inorganics	Sodium	-	-	J	SD	Serial dilution %D above QC criteria
1410130	M-15	GW	Inorganics	Sodium	-	-	J	SD	Serial dilution %D above QC criteria
1410130	M-13	GW	Inorganics	Sodium	-	-	J	SD	Serial dilution %D above QC criteria
1410130	M-14	GW	Inorganics	Sodium	-	-	J	SD	Serial dilution %D above QC criteria
1410130	FDGW-102114	GW	Inorganics	Potassium	-	-	J	SD	Serial dilution %D above QC criteria
1410130	M-1	GW	Inorganics	Potassium	-	-	J	SD	Serial dilution %D above QC criteria
1410130	M-3	GW	Inorganics	Potassium	-	-	J	SD	Serial dilution %D above QC criteria
1410130	M-27	GW	Inorganics	Potassium	-	-	J	SD	Serial dilution %D above QC criteria
1410130	M-8	GW	Inorganics	Potassium	-	-	J	SD	Serial dilution %D above QC criteria
1410130	M-6	GW	Inorganics	Potassium	-	-	J	SD	Serial dilution %D above QC criteria
1410130	M-9A	GW	Inorganics	Potassium	-	-	J	SD	Serial dilution %D above QC criteria
1410130	M-4	GW	Inorganics	Potassium	-	-	J	SD	Serial dilution %D above QC criteria
1410130	M-2	GW	Inorganics	Potassium	-	-	J	SD	Serial dilution %D above QC criteria
1410130	M-5-102214	GW	Inorganics	Potassium	-	-	J	SD	Serial dilution %D above QC criteria
1410130	M-16	GW	Inorganics	Potassium	-	-	J	SD	Serial dilution %D above QC criteria
1410130	M-11	GW	Inorganics	Potassium	-	-	J	SD	Serial dilution %D above QC criteria
1410130	M-15	GW	Inorganics	Potassium	-	-	J	SD	Serial dilution %D above QC criteria
1410130	M-13	GW	Inorganics	Potassium	-	-	J	SD	Serial dilution %D above QC criteria
1410130	M-14	GW	Inorganics	Potassium	-	-	J	SD	Serial dilution %D above QC criteria
1410141	W5-UD	SW	Inorganics	Cyanide	-	-	UJ	SC	Sample preserved to pH = 11
1410141	R1-U	SW	Inorganics	Barium	200	-	U	ICB	Initial calibration blank contamination
1410141	R2-U	SW	Inorganics	Barium	200	-	U	ICB	Initial calibration blank contamination
1410141	FDSW-102214	SW	Inorganics	Barium	200	-	U	ICB	Initial calibration blank contamination
1410141	R4-D	SW	Inorganics	Barium	200	-	U	ICB	Initial calibration blank contamination
1410141	W1-U	SW	Inorganics	Barium	200	-	U	ICB	Initial calibration blank contamination
1410141	W2-U	SW	Inorganics	Barium	200	-	U	ICB	Initial calibration blank contamination
1410141	W3-D	SW	Inorganics	Barium	200	-	U	ICB	Initial calibration blank contamination

TABLE A-2
SUMMARY OF DATA QUALIFICATIONS
FIRST QUARTER OF THE SECOND BASELINE PHASE, NORTH AND SOUTH FILLS
SHARKEY LANDFILL

SDG	Field ID	Matrix	Analysis	Analyte	New Result	New RL	Qual	Golder Qual Code	Comments
1410141	W4-U	SW	Inorganics	Barium	200	-	U	ICB	Initial calibration blank contamination
1410141	W5-UD	SW	Inorganics	Barium	200	-	U	ICB	Initial calibration blank contamination
1410141	R3-D-102314	SW	Inorganics	Barium	200	-	U	ICB	Initial calibration blank contamination
1410141	W1-U	SW	Inorganics	Potassium	5000	-	U	CBC	Continuing calibration blank contamination
1410141	W2-U	SW	Inorganics	Potassium	5000	-	U	CBC	Continuing calibration blank contamination
1410141	W3-D	SW	Inorganics	Potassium	5000	-	U	CBC	Continuing calibration blank contamination
1410141	W4-U	SW	Inorganics	Potassium	5000	-	U	CBC	Continuing calibration blank contamination
1410141	W5-UD	SW	Inorganics	Potassium	5000	-	U	CBC	Continuing calibration blank contamination
1410141	W6-D	SW	Inorganics	Barium	200	-	U	PB	Preparation blank contamination
1410141	W6-D	SW	Inorganics	Beryllium	5	-	U	CBC	Continuing calibration blank contamination
1410141	W6-D	SW	Inorganics	Nickel	40	-	U	CBC	Continuing calibration blank contamination
1410141	FDSW-102214	SW	Inorganics	Potassium	-	-	J	SD	Serial dilution %D above QC criteria
1410141	R1-U	SW	Inorganics	Potassium	-	-	J	SD	Serial dilution %D above QC criteria
1410141	R2-U	SW	Inorganics	Potassium	-	-	J	SD	Serial dilution %D above QC criteria
1410141	R3-D	SW	Inorganics	Potassium	-	-	J	SD	Serial dilution %D above QC criteria
1410141	R4-D	SW	Inorganics	Potassium	-	-	J	SD	Serial dilution %D above QC criteria
1410141	R3-D-102314	SW	Inorganics	Potassium	-	-	J	SD	Serial dilution %D above QC criteria
1410141	W6-D	SW	Inorganics	Potassium	-	-	J	SD	Serial dilution %D above QC criteria
1410141	FDSW-102214	SW	Inorganics	Sodium	-	-	J	SD	Serial dilution %D above QC criteria
1410141	R1-U	SW	Inorganics	Sodium	-	-	J	SD	Serial dilution %D above QC criteria
1410141	R2-U	SW	Inorganics	Sodium	-	-	J	SD	Serial dilution %D above QC criteria
1410141	R3-D	SW	Inorganics	Sodium	-	-	J	SD	Serial dilution %D above QC criteria
1410141	R4-D	SW	Inorganics	Sodium	-	-	J	SD	Serial dilution %D above QC criteria
1410141	W1-U	SW	Inorganics	Sodium	-	-	J	SD	Serial dilution %D above QC criteria
1410141	W2-U	SW	Inorganics	Sodium	-	-	J	SD	Serial dilution %D above QC criteria
1410141	W3-D	SW	Inorganics	Sodium	-	-	J	SD	Serial dilution %D above QC criteria
1410141	W4-U	SW	Inorganics	Sodium	-	-	J	SD	Serial dilution %D above QC criteria
1410141	W5-UD	SW	Inorganics	Sodium	-	-	J	SD	Serial dilution %D above QC criteria
1410141	R3-D-102314	SW	Inorganics	Sodium	-	-	J	SD	Serial dilution %D above QC criteria
1410141	W6-D	SW	Inorganics	Sodium	-	-	J	SD	Serial dilution %D above QC criteria
1410143	FDSW-102214	SW	VOCs	Acrolein	-	-	UJ	IRF	Initial calibration RRF below QC criteria
1410143	R1-U	SW	VOCs	Acrolein	-	-	UJ	IRF	Initial calibration RRF below QC criteria
1410143	R2-U	SW	VOCs	Acrolein	-	-	UJ	IRF	Initial calibration RRF below QC criteria
1410143	R3-D	SW	VOCs	Acrolein	-	-	UJ	IRF	Initial calibration RRF below QC criteria
1410143	R4-D	SW	VOCs	Acrolein	-	-	UJ	IRF	Initial calibration RRF below QC criteria
1410143	W1-U	SW	VOCs	Acrolein	-	-	UJ	IRF	Initial calibration RRF below QC criteria
1410143	W2-U	SW	VOCs	Acrolein	-	-	UJ	IRF	Initial calibration RRF below QC criteria
1410143	W3-D	SW	VOCs	Acrolein	-	-	UJ	IRF	Initial calibration RRF below QC criteria
1410143	W4-U	SW	VOCs	Acrolein	-	-	UJ	IRF	Initial calibration RRF below QC criteria
1410143	W5-UD	SW	VOCs	Acrolein	-	-	UJ	IRF	Initial calibration RRF below QC criteria
1410143	W6-D	SW	VOCs	Acrolein	-	-	UJ	IRF	Initial calibration RRF below QC criteria
1410143	FDSW-102214	SW	VOCs	Acrylonitrile	-	-	UJ	IRF	Initial calibration RRF below QC criteria
1410143	R1-U	SW	VOCs	Acrylonitrile	-	-	UJ	IRF	Initial calibration RRF below QC criteria
1410143	R2-U	SW	VOCs	Acrylonitrile	-	-	UJ	IRF	Initial calibration RRF below QC criteria
1410143	R3-D	SW	VOCs	Acrylonitrile	-	-	UJ	IRF	Initial calibration RRF below QC criteria
1410143	R4-D	SW	VOCs	Acrylonitrile	-	-	UJ	IRF	Initial calibration RRF below QC criteria

TABLE A-2
SUMMARY OF DATA QUALIFICATIONS
FIRST QUARTER OF THE SECOND BASELINE PHASE, NORTH AND SOUTH FILLS
SHARKEY LANDFILL

SDG	Field ID	Matrix	Analysis	Analyte	New Result	New RL	Qual	Golder Qual Code	Comments
1410143	W1-U	SW	VOCs	Acrylonitrile	-	-	UJ	IRF	Initial calibration RRF below QC criteria
1410143	W2-U	SW	VOCs	Acrylonitrile	-	-	UJ	IRF	Initial calibration RRF below QC criteria
1410143	W3-D	SW	VOCs	Acrylonitrile	-	-	UJ	IRF	Initial calibration RRF below QC criteria
1410143	W4-U	SW	VOCs	Acrylonitrile	-	-	UJ	IRF	Initial calibration RRF below QC criteria
1410143	W5-UD	SW	VOCs	Acrylonitrile	-	-	UJ	IRF	Initial calibration RRF below QC criteria
1410143	W6-D	SW	VOCs	Acrylonitrile	-	-	UJ	IRF	Initial calibration RRF below QC criteria
1410143	FDSW-102214	SW	VOCs	2-Chloroethylvinyl ether	-	-	UJ	CRF	Continuing calibration RRF below QC criteria
1410143	R1-U	SW	VOCs	2-Chloroethylvinyl ether	-	-	UJ	CRF	Continuing calibration RRF below QC criteria
1410143	R2-U	SW	VOCs	2-Chloroethylvinyl ether	-	-	UJ	CRF	Continuing calibration RRF below QC criteria
1410143	R3-D	SW	VOCs	2-Chloroethylvinyl ether	-	-	UJ	CRF	Continuing calibration RRF below QC criteria
1410143	R4-D	SW	VOCs	2-Chloroethylvinyl ether	-	-	UJ	CRF	Continuing calibration RRF below QC criteria
1410143	W1-U	SW	VOCs	2-Chloroethylvinyl ether	-	-	UJ	CRF	Continuing calibration RRF below QC criteria
1410143	W2-U	SW	VOCs	2-Chloroethylvinyl ether	-	-	UJ	CRF	Continuing calibration RRF below QC criteria
1410143	W3-D	SW	VOCs	2-Chloroethylvinyl ether	-	-	UJ	CRF	Continuing calibration RRF below QC criteria
1410143	W4-U	SW	VOCs	2-Chloroethylvinyl ether	-	-	UJ	CRF	Continuing calibration RRF below QC criteria
1410143	W5-UD	SW	VOCs	2-Chloroethylvinyl ether	-	-	UJ	CRF	Continuing calibration RRF below QC criteria
1410143	W6-D	SW	VOCs	2-Chloroethylvinyl ether	-	-	UJ	CRF	Continuing calibration RRF below QC criteria

Notes:
%D = Percent Difference.
GW= Groundwater
J = Result is estimated.
MS/MSD = Matrix Spike and Matrix Spike Duplicate
PCB = Polychlorinated Biphenyl
Pest = Pesticides
QC = Quality Control.
Qual = Qualifier
R = Sample result is rejected.
RL = Reporting limit
RRF = Relative response factor.
SDG = sample delivery group
SVOC = Semivolatile Organic Compound
SW = Surface water
U = Non-detect.
UJ = Non-detected result is estimated.
VOC = Volatile Organic Compound
GW = Ground Water

Golder Codes:

CBC	Continuing Calibration Blank contamination
CRD	Calibration verification %D
CRF	Continuing Calibration RRF < QC Limits
ICB	Initial calibration blank contamination
IRF	Initial Calibration RRF < QC Limits
PB	Preparation blank contamination
PD	Percent difference between columns > 25%
RB	Rinsate blank contamination
SC	Sample condition upon receipt
SD	Serial dilution %D
SL	Surrogate recovery below quality control limits

APPENDIX B

SUMMARY OF VALIDATED DATA, DETECTED ANALYTICAL TEST RESULTS FIRST QUARTER OF THE SECOND BASELINE PHASE - NORTH AND SOUTH FILLS

GROUNDWATER DATA

Summary of Validated Data
Detected Analytical Results
Volatile Organic Compounds
First Quarter of the Second Baseline Phase - North and South Fills
Sharkey Landfill

Sample Location:			M-1		M-10		M-11		M-12		M-13		M-14		M-15		M-16		M-2		M-27	
Sample Name:			M-1		M-10		M-11		M-12		M-13		M-14		M-15		M-16		M-2		M-27	
Sample Date:			10/21/2014		10/22/2014		10/23/2014		10/23/2014		10/23/2014		10/23/2014		10/23/2014		10/23/2014		10/22/2014		10/21/2014	
N=Normal, FD=Field Duplicate			N		N		N		N		N		N		N		N		N		N	
Parameter	Unit	Well Trigger	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,3-Dichlorobenzene	ug/L																					
1,4-Dichlorobenzene	ug/L																					
1,4-Dioxane	ug/L				230	J					220	J	410	J							310	J
Acetone	ug/L		6.9	J																		
Benzene[1]	ug/L	50	3.6	J			10														13	
Chlorobenzene	ug/L		21				12								26						22	
cis-1,2-Dichloroethene	ug/L										2.9	J	1.1	J								
Cyclohexane	ug/L																2.4	J				
Isopropylbenzene	ug/L		4.4	J			18														2	J
m,p-Xylenes	ug/L		1.9	J			0.98	J													0.83	J
Methyl tert-Butyl Ether	ug/L						0.29	J					0.97	J			1.6	J			0.33	J
o-Xylene	ug/L		1.5	J			0.76	J													0.9	J
Toluene	ug/L		0.47	J																	0.4	J
Total VOCs	ug/L	1000	39.77		230		42.03				222.9		412.1		26		4				349.5	

1. The well trigger for benzene for the Whippany River = 100 ug/L.

Checked by: LM 12/23/2014

Golder Associates

Summary of Validated Data
Detected Analytical Results
Volatile Organic Compounds
First Quarter of the Second Baseline Phase - North and South Fills
Sharkey Landfill

Sample Location:			M-3		M-4		M-5		M-6		M-6		M-8		M-9A	
Sample Name:			M-3		M-4		M-5-102214		M-6		FDGW-10211		M-8		M-9A	
Sample Date:			10/21/2014		10/22/2014		10/22/2014		10/21/2014		10/21/2014		10/21/2014		10/22/2014	
N=Normal, FD=Field Duplicate			N		N		N		N		FD		N		N	
Parameter	Unit	Well Trigger	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,3-Dichlorobenzene	ug/L		2	J												
1,4-Dichlorobenzene	ug/L		4.7	J												
1,4-Dioxane	ug/L				750	J										
Acetone	ug/L				13											
Benzene[1]	ug/L	50	3.5	J	12				5.5		5.1					
Chlorobenzene	ug/L		45		7.5		48		51		49					
cis-1,2-Dichloroethene	ug/L															
Cyclohexane	ug/L															
Isopropylbenzene	ug/L		1.5	J	6.9		1.5	J	2.7	J	2.9	J				
m,p-Xylenes	ug/L		0.85	J	5.5		0.73	J	0.47	J	0.46	J				
Methyl tert-Butyl Ether	ug/L				0.54	J										
o-Xylene	ug/L		0.59	J	11		2.1	J	0.66	J	0.57	J				
Toluene	ug/L		0.45	J	0.85	J	0.63	J	0.61	J	0.56	J				
Total VOCs	ug/L	1000	58.59		807.3		52.96		60.94		58.59					

1. The well trigger for benzene for the Whippany River = 100 ug/L.

Checked by: LM 12/23/2014

Golder Associates

Summary of Validated Data
Detected Analytical Results
Semivolatile Organic Compounds
First Quarter of the Second Baseline Phase - North and South Fills
Sharkey Landfill

Sample Location:			M-1		M-10		M-11		M-12		M-13		M-14		M-15		M-16		M-2		M-27		M-
Sample Name:			M-1		M-10		M-11		M-12		M-13		M-14		M-15		M-16		M-2		M-27		M-
Sample Date:			10/21/2014		10/22/2014		10/23/2014		10/23/2014		10/23/2014		10/23/2014		10/23/2014		10/23/2014		10/22/2014		10/21/2014		10/21/
N=Normal, FD=Field Duplicate			N		N		N		N		N		N		N		N		N		N		N
Parameter	Unit	Well Trigger	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result
2-Methylnaphthalene	ug/L		0.97	J																			
Benzaldehyde	ug/L		1.3	J																			
Bis(2-ethylhexyl) Phthalate	ug/L	100							26								5.3						
Caprolactum	ug/L		15																				
Naphthalene	ug/L		1.8	J																			
Phenol	ug/L																				2.4	J	

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Summary of Validated Data
Detected Analytical Results
Semivolatile Organic Compounds
First Quarter of the Second Baseline Phase - North and South Fills
Sharkey Landfill

Sample Location:			3	M-4		M-5		M-6		M-6		M-8		M-9A	
Sample Name:			3	M-4		M-5-102314		M-6		FDGW-102114		M-8		M-9A	
Sample Date:			2014	10/22/2014		10/23/2014		10/21/2014		10/21/2014		10/21/2014		10/22/2014	
N=Normal, FD=Field Duplicate				N		N		N		FD		N		N	
Parameter	Unit	Well Trigger	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
2-Methylnaphthalene	ug/L														
Benzaldehyde	ug/L														
Bis(2-ethylhexyl) Phthalate	ug/L	100													
Caprolactum	ug/L					13									
Naphthalene	ug/L			3.2	J										
Phenol	ug/L														

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Summary of Validated Data
Detected Analytical Results
Pesticides/PCBs
First Quarter of the Second Baseline Phase - North and South Fills
Sharkey Landfill

Sample Location:			M-1		M-10		M-11		M-12		M-13		M-14		M-15		M-16		M-2		M-27	
Sample Name:			M-1		M-10		M-11		M-12		M-13		M-14		M-15		M-16		M-2		M-27	
Sample Date:			10/21/2014		10/22/2014		10/23/2014		10/23/2014		10/23/2014		10/23/2014		10/23/2014		10/23/2014		10/22/2014		10/21/2014	
N=Normal, FD=Field Duplicate			N		N		N		N		N		N		N		N		N		N	
Parameter	Unit	Well Trigger	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
Aroclor 1242	ug/L																					
Aroclor 1254	ug/L																					
beta-BHC	ug/L		0.0661	R			0.0608	R													0.0518	R
gamma-BHC	ug/L																					
Heptachlor Epoxide	ug/L																					

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Summary of Validated Data
Detected Analytical Results
Pesticides/PCBs
First Quarter of the Second Baseline Phase - North and South Fills
Sharkey Landfill

Sample Location:			M-3		M-4		M-5		M-6		M-6		M-8		M-9A	
Sample Name:			M-3		M-4		M-5-102314		M-6		FDGW-102114		M-8		M-9A	
Sample Date:			10/21/2014		10/22/2014		10/23/2014		10/21/2014		10/21/2014		10/21/2014		10/22/2014	
N=Normal, FD=Field Duplicate			N		N		N		N		FD		N		N	
Parameter	Unit	Well Trigger	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
Aroclor 1242	ug/L		0.734	J												
Aroclor 1254	ug/L		0.325	J												
beta-BHC	ug/L		0.0644		0.0663	R										
gamma-BHC	ug/L				0.0113	J										
Heptachlor Epoxide	ug/L		0.0217	J												

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Summary of Validated Data
Detected Analytical Results
Inorganics
First Quarter of the Second Baseline Phase - North and South Fills
Sharkey Landfill

Sample Location:			M-1		M-10		M-11		M-12		M-13		M-14		M-15		M-16		M-2		M-27	
Sample Name:			M-1		M-10		M-11		M-12		M-13		M-14		M-15		M-16		M-2		M-27	
Sample Date:			10/21/2014		10/22/2014		10/23/2014		10/23/2014		10/23/2014		10/23/2014		10/23/2014		10/23/2014		10/22/2014		10/21/2014	
N=Normal, FD=Field Duplicate			N		N		N		N		N		N		N		N		N		N	
Parameter	Unit	Well Trigger	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
Aluminum	ug/L		39.9	J			120	J	24.4	J	199	J	37.3	J	71.6	J	240		115	J		
Antimony	ug/L																					
Arsenic	ug/L	50			7.68	J	49.1		4.24	J	36.1		12.3		24.9		8.64	J			3.33	J
Barium	ug/L	1000	477				464				341		328				488				528	
Cadmium	ug/L	10																	0.763	J	0.279	J
Calcium	ug/L		64300		56800		34800		126000		96000		78200		85200		141000		95700		111000	
Chromium	ug/L	50	11.6				6.44	J			1.01	J	0.689	J			1.05	J	0.4	J	4.5	J
Cobalt	ug/L		12.3	J			18.9	J													7.14	J
Copper	ug/L																		9.38	J		
Cyanide	ug/L		3.05	J																		
Iron	ug/L		14900		19500		5430		639		4400		5020		10800		4030		3310		21500	
Magnesium	ug/L		43000		14900		43700		20500		31400		26400		18800		41800		8120		54200	
Manganese	ug/L		571		2490		29.9		335		233		407		138		246		37.3		746	
Nickel	ug/L		52				74.3		11.1	J	10.2	J	6.58	J	4.2	J	4.78	J	29.1	J	42.6	
Potassium	ug/L		144000	J			117000	J			32400	J	20000	J	17900	J	20700	J	5430	J	93900	J
Sodium	ug/L		530000	J	23400	J	495000	J	134000	J	155000	J	113000	J	53900	J	88700	J	4350	J	326000	J
Vanadium	ug/L		15.3	J			5.03	J													1.19	J
Zinc	ug/L		7.83	J			5.91	J			5.77	J	3.26	J			3.46	J	212	J	10.3	J

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Summary of Validated Data
Detected Analytical Results
Inorganics
First Quarter of the Second Baseline Phase - North and South Fills
Sharkey Landfill

Sample Location:			M-3		M-4		M-5		M-6		M-6		M-8		M-9A	
Sample Name:			M-3		M-4		M-5-102214		M-6		FDGW-102114		M-8		M-9A	
Sample Date:			10/21/2014		10/22/2014		10/22/2014		10/21/2014		10/21/2014		10/21/2014		10/22/2014	
N=Normal, FD=Field Duplicate			N		N		N		N		FD		N		N	
Parameter	Unit	Well Trigger	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
Aluminum	ug/L		30.6	J	160	J	17.6	J					203			
Antimony	ug/L								5.08	J						
Arsenic	ug/L	50			4.36	J			28.4		28.5				2.81	J
Barium	ug/L	1000			764		256		308		313					
Cadmium	ug/L	10							0.555	J	0.591	J	0.672	J		
Calcium	ug/L		103000		166000		103000		119000		118000		146000		47400	
Chromium	ug/L	50	0.995	J	39.4		2.16	J	2.87	J	2.89	J	4.5	J	0.432	J
Cobalt	ug/L				52.1		1.65	J	2.51	J	3.63	J	5.05	J	2.35	J
Copper	ug/L		1.04	J	1.35	J							2.91	J		
Cyanide	ug/L				8.26	J										
Iron	ug/L		9100		13700		19500		57000		56500		49400		13800	
Magnesium	ug/L		26300		87800		36700		39500		39700		30700		14000	
Manganese	ug/L		251		220		727		890		878		886		1290	
Nickel	ug/L		2.37	J	204		8.29	J	13.9	J	17.1	J	18.5	J		
Potassium	ug/L		21100	J	270000	J	31700	J	41400	J	44700	J	6010	J	7840	J
Sodium	ug/L		22100	J	1030000	J	75800	J	93700	J	105000	J	7390	J	67800	J
Vanadium	ug/L				71.8		1.08	J								
Zinc	ug/L		11.3	J									7.28	J		

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SURFACE WATER DATA

Summary of Validated Data
Detected Analytical Results
Volatile Organic Compounds
First Quarter of the Second Baseline Phase - North and South Fills
Sharkey Landfill

Sample Location:			R1(U)		R1(U)		R2(U)		R3(D)		R4(D)		W1(U)		W2(U)		W3(D)		W4(U)		W5(U/D)		W6(D)	
Sample Name:			R1-U		FDSW-102214		R2-U		R3-D		R4-D		W1-U		W2-U		W3-D		W4-U		W5-UD		W6-D	
Sample Date:			10/22/2014		10/22/2014		10/22/2014		10/22/2014		10/22/2014		10/23/2014		10/23/2014		10/23/2014		10/23/2014		10/23/2014		10/23/2014	
N=Normal, FD=Field Duplicate			N		FD		N		N		N		N		N		N		N		N		N	
Parameter	Unit	River Trigger	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
Acetone	ug/L		4	J	4.6	J	5.7		5.4		3	J			3.9	J	4.6	J	4.3	J	5		3.7	J
Bromodichloromethane	ug/L	0.27									0.26	J												
Chloroform	ug/L	5.7					0.09	J	0.13	J	0.65				0.051	J	0.067	J						
Dibromochloromethane	ug/L	0.41									0.067	J												
Methyl tert-Butyl Ether	ug/L										0.22	J												
Toluene	ug/L	6800																			0.055	J		

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Summary of Validated Data
Detected Analytical Results
Semivolatile Organic Compounds
First Quarter of the Second Baseline Phase - North and South Fills
Sharkey Landfill

Sample Location:			R1(U)		R1(U)		R2(U)		R3(D)		R4(D)		W1(U)		W2(U)		W3(D)		W4(U)		W5(U/D)		W6(D)	
Sample Name:			R1-U		FDSW-102214		R2-U		R3-D		R4-D		W1-U		W2-U		W3-D		W4-U		W5-UD		W6-D	
Sample Date:			10/22/2014		10/22/2014		10/22/2014		10/22/2014		10/22/2014		10/23/2014		10/23/2014		10/23/2014		10/23/2014		10/23/2014		10/23/2014	
N=Normal, FD=Field Duplicate			N		FD		N		N		N		N		N		N		N		N		N	
Parameter	Unit	Trigger	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
No Analytes Detected																								

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Summary of Validated Data
Detected Analytical Results
Pesticides/PCBs
First Quarter of the Second Baseline Phase - North and South Fills
Sharkey Landfill

Sample Location:			R1(U)		R1(U)		R2(U)		R3(D)		R4(D)		W1(U)		W2(U)		W3(D)		W4(U)		W5(U/D)		W6(D)	
Sample Name:			R1-U		FDSW-102214		R2-U		R3-D		R4-D		W1-U		W2-U		W3-D		W4-U		W5-UD		W6-D	
Sample Date:			10/22/2014		10/22/2014		10/22/2014		10/22/2014		10/22/2014		10/23/2014		10/23/2014		10/23/2014		10/23/2014		10/23/2014		10/23/2014	
N=Normal, FD=Field Duplicate			N		FD		N		N		N		N		N		N		N		N		N	
Parameter	Unit	Trigger	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
No Analytes Detected																								

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Summary of Validated Data
Detected Analytical Results
Inorganics
First Quarter of the Second Baseline Phase - North and South Fills
Sharkey Landfill

		sys_loc_code	R1(U)		R1(U)		R2(U)		R3(D)		R4(D)		W1(U)		W2(U)		W3(D)		W4(U)		W5(U/D)		W6(D)	
		Sample Name:	R1-U		FDSW-102214		R2-U		R3-D-102314		R4-D		W1-U		W2-U		W3-D		W4-U		W5-UD		W6-D	
		Sample Date:	10/22/2014		10/22/2014		10/22/2014		10/23/2014		10/22/2014		10/23/2014		10/23/2014		10/23/2014		10/23/2014		10/23/2014		10/23/2014	
N=Normal, FD=Field Duplicate			N		FD		N		N		N		N		N		N		N		N		N	
Parameter	Unit	River Trigger	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
Chromium	ug/L		0.936	J	0.736	J	1.32	J	0.458	J	1.03	J	0.568	J	1.29	J	1.08	J	1.53	J	1.31	J	1.73	J
Copper	ug/L		3.42	J	3.38	J	3.62	J	3.47	J	8.73	J	3.63	J	5.55	J	5.55	J	5.49	J	5.67	J	3.28	J
Cyanide	ug/L										1.52	J												
Manganese	ug/L		52.7		55.5		61.1		29		39		21.1		59.7		57.5		66.8		67.9		71.9	
Nickel	ug/L		3.95	J	3.67	J	3.88	J	2.53	J	2.83	J							2.14	J				
Potassium	ug/L		5930	J	6110	J	5790	J	7690	J	10500	J											3270	J
Selenium	ug/L								5.37	J			5.77	J										
Sodium	ug/L		32200	J	33100	J	31900	J	40200	J	99800	J	45500	J	37600	J	37600	J	38200	J	38500	J	42600	J
Vanadium	ug/L				0.695	J	0.708	J					1.21	J	1.07	J	1.4	J	1.16	J	1.5	J	1.58	J
Zinc	ug/L		11.3	J	13	J	15.1	J	14.1	J	21.7	J	12.2	J	11.7	J	10.9	J	12.5	J	12.5	J	17.7	J

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APPENDIX C

NJDEP HZSITE ELECTRONIC DATA DELIVERABLE
FIRST QUARTER OF THE SECOND BASELINE PHASE - NORTH AND SOUTH FILLS

(SUBMITTED ELECTRONICALLY TO NJDEP)

APPENDIX D

EPA REGION II ELECTRONIC DATA DELIVERABLE
FIRST QUARTER OF THE SECOND BASELINE PHASE - NORTH AND SOUTH FILLS

(SUBMITTED ELECTRONICALLY TO USEPA REGION II)

At Golder Associates we strive to be the most respected global group of companies specializing in ground engineering and environmental services. Employee owned since our formation in 1960, we have created a unique culture with pride in ownership, resulting in long-term organizational stability. Golder professionals take the time to build an understanding of client needs and of the specific environments in which they operate. We continue to expand our technical capabilities and have experienced steady growth with employees now operating from offices located throughout Africa, Asia, Australasia, Europe, North America and South America.

Africa	+ 27 11 254 4800
Asia	+ 852 2562 3658
Australasia	+ 61 3 8862 3500
Europe	+ 356 21 42 30 20
North America	+ 1 800 275 3281
South America	+ 55 21 3095 9500

solutions@golder.com
www.golder.com

Golder Associates Inc.
200 Century Parkway, Suite C
Mt. Laurel, NJ 08054 USA
Tel: (856) 793-2005
Fax: (856) 793-2006

Golder Associates